



BEST FRAMEWORK
INTEGRATED MODELING
FESTIVAL 2017



"I FORGOT WHAT IDL IS SINCE"



"AN ABSOLUTE MUST USE"



"IT SIMPLY FILLS YOU WITH JOY"



"IT WILL HAVE YOU HOULING !"



Contents

[Contents](#)

[Overall Usage Statistics](#)

[Success Stories](#)

[GA Highlights](#)

[PPPL Highlights](#)

[Detailed OMFIT Usage \(as of 13 Feb 2017\)](#)

[Hosts Where OMFIT Has Run](#)

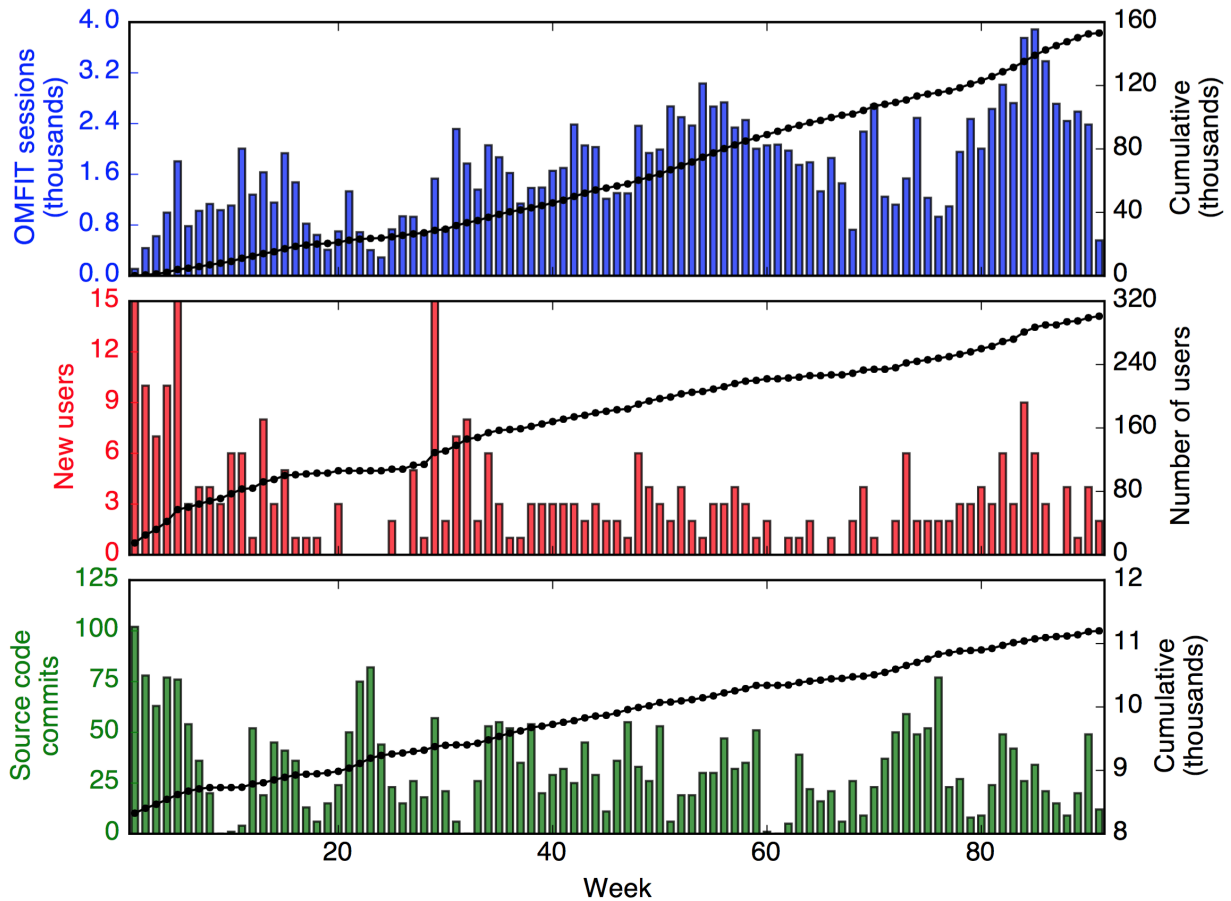
[Overall Modules Sorted by Number of Imports](#)

[Module Imports by Username](#)

[Lines of Code per Contributor](#)

[Prompt](#)

Overall Usage Statistics



Success Stories

What follows are user contributions of how they have used OMFIT. The list is not comprehensive, as there are ~260 unique usernames that have tried OMFIT to some degree.

Name: Orso Meneghini

E.S. Raymond wrote in the book "The Cathedral and the Bazaar" that "Every good work of software starts by scratching a developer's personal itch". Indeed, the development of OMFIT started with the intention of making a tool to help me conduct my own research. I used OMFIT to develop workflows that enable coupled core-pedestal simulations [Meneghini PoP 2016], as well as to pioneer the use of neural-network models for the pedestal structure based on a large database of EPED simulations [Meneghini IAEA 2016, Meneghini NF 2017], and core turbulent transport data (based either on experimental data [Meneghini PoP 2014] or TGLF simulations [Meneghini IAEA 2016, Meneghini NF 2017]). Both of these accomplishments would have not

been possible without OMFIT's ability to execute the complex workflows on computationally heterogeneous and geographically distributed systems, orchestrate the submission of simulation scans based on experimental parameters to HPC systems, and handling of remote databases for machine learning applications. Equally important, I have leveraged OMFIT's ability to abstract this complexity from the users, and make my predictive models easily accessible to a wide pool of scientists. Finally, and perhaps even more importantly, OMFIT has graduated from being a personal project to becoming the only fusion community-driven integrated modeling platform, which is now gathering the contributions of over thirty physicists across many domestic and international institutions, and is supporting the research of over two hundred scientists worldwide. The details of the framework and an overview of its capabilities are reviewed in [Meneghini PFR 2013, Meneghini NF 2015].

Name: Sterling Smith

I have used OMFIT's TGLF_scan module to be able to conduct parameter scans of the TGLF code and compare TGLF to experiment [Smith IAEA 2014, TTF2016]. Working through the TGLF_scan module revealed some of its shortcomings, and I was able to make sizeable contributions to it and its submodules for providing the highest quality comparison to experiment. I could have done this without OMFIT, but it would have taken a lot longer, and there would not have been the unified infrastructure for sharing my methods with others.

Name: Chris Holland

Use of OMFIT capabilities was essential for data analysis and simulation management for a number of validation studies including multiscale transport in ITER baseline discharges [Holland IAEA 2016], simulating transport in ITER current ramp experiments [McKee IAEA 2016], testing TGLF predictions of H-mode transport stiffness on rotation [Luce EPS 2016, 2 papers in review/preparation], and testing predicted response of transport at pedestal top to RMP fields [Orlov 2014]. In particular, OMFIT's ability to facilitate multi-shot, multi-time profile and kinetic EFIT analysis, as well as TGLF scans for each condition, was essential for a number of these studies.

Name: Nikolas Logan

OMFIT has been instrumental in producing high fidelity kinetic EFIT equilibrium and profiles, which are the fundamental starting point for my work in 3D and stability physics. Moreover, OMFIT has had a significant impact on the applications of my work: in the 2017 run campaign Lang Cui was able to learn IPEC and use it in the control room to optimize the resonant field coupling of the DIII-D coil arrays. This enabled a significant piggy-back experiment and is the sort of streamlined experimental application that neither model creator (Jong-Kyu or myself) have previously been able to offer. Finally, I plan to utilize the unique capabilities of OMFIT to perform time dependent studies of plasma response and stability. This important study will provide limits for the required accuracy of automatic EFITs for stability feedback, possibly saving huge amounts of program effort.

Name: David Eldon

I developed a new SOLPS module in OMFIT to make SOL predictions of DIII-D, which I presented at PSI2016. I developed utilities to help with PCS work: translate PID controls from common forms to forms used in PCS and those displayed in reviewplus (there are FOUR different conventions), support TIMCON programming by plotting timcon file contents as power vs. time instead of beam sources vs. time (helpful when mixing beam sources with greatly different power outputs). I developed a sub-module in the boundary toolbox to do the entirety of my IAEA analysis and figure generation. I am now using OMFIT to develop a module that will generate kinetic equilibrium reconstructions for DIII-D between shots.

Name: Shaun Haskey

I have developed modules for FIDASIM, XGC0, main ion CER analysis, and parts of OMFITprofiles to better understand differences between the toroidal rotation, temperature, and density profiles of main ions (D I) and impurities (C VI) in the pedestal and steep gradient region. Analysis of main-ion CER data is very challenging and relies on profiles from other diagnostics, kinetic EFITs, and transport analysis, all of which are available in OMFIT through modules such as kineticEFITtime, OMFITprofiles, and TRANSP. I have found OMFIT indispensable for creating this integrated workflow, and being able to share it with others who work with the main ion CER system. This has increased efficiency and reduced code duplication. Comparing the corrected data from the main ion CER diagnostic with analytical neoclassical models (Kim-Diamond_Groebner), XGC0, NEO and NCLASS is also being performed within OMFIT. I am using OMFIT for many more generic tasks that I would typically use python for. For example, to traverse MDSplus trees when debugging CER related issues and to visualize data stored in netCDF files.

Name: Val Izzo

I currently run all my NIMROD cases with OMFIT which not only simplifies setup and execution but also facilitates post-processing, comparison of results across multiple simulations, and automatic archiving of results remotely at NERSC. The NIMROD runs are used in mainly the interpretation and prediction of disruption mitigation techniques such as MGI, and their implication for disruption mitigation metrics. A runaway electron (RE) module was built on top of the NIMROD module to help generate runaway electron initial conditions and write input files in HDF5 format and facilitate analysis of results concerning MHD effects on runaway electron confinement.

Name: Matthias Knolker

I used OMFIT extensively to carry out edge stability analysis with ELITE, as well as used the EPED1-NN model to make predictions about an upcoming experiment.

Name: Lang Cui

I have carried out numerous TRANSP analyses to support interpretation of the effects of 3d fields and carried out TGLF scan analysis in the control room to determine the nature of turbulence during recent rotation thrust experiments.

Name: Kathreen Thome

I have used OMFIT to study transport and turbulence in steady-state hybrids. The ability to perform this analysis of fitting profiles, making EFITs, preparing TRANSP runs, making kineticEFITs, and running TGYRO all within a single OMFIT project has greatly streamlined the process.

Name: Brian Grierson

I have taken over the development of the TRANSP module, which has recently been expanded to provide an interface for setting up JET and NSTX TRANSP runs. The OMFIT front-end to TRANSP provides the ease of use that makes TRANSP more accessible to the average experimentalist. I have also developed the STRAHL module to be able to interpret impurity emissions and transport, such as from fluorine, chlorine, and argon gas puffing and is being used to interpret the tungsten rings experiments.

Name: Brian Victor

I have used OMFIT to utilize the XEUS spectrometer in profile and impurity analysis, combining profile analysis with OMFIT profiles, kinetic EFITs, TRANSP and STRAHL. All of these physics modules are required to test TGLF and NEO impurity transport models.

Name: Gregorio L. Trevisan

In order to understand the implications of uncertainties in the magnetic probe and flux loop signals on the strike point analysis in the SAS divertor, I have run 1000's of EFIT runs with perturbations on the flux loops and magnetic probe signals. On one hand, this gave me the chance to exploit the already-robust OMFIT class for handling gEQDSKs, and on the other hand it let me handle high amounts of information thanks to Python's flexibility.

I have also run TRIP3D both through its CPU and GPU versions and designed an OMFIT class to parse the output files independently of their architecture and format, which helped me to build one-click plots, such as Poincare' plots and contour plots, for each simulation. Such an effort payed off in terms of visualization speed after a given simulation has finished running.

Name: Gary Staebler, John DeGrassie, Dmitri Orlov

OMFIT has proved useful for organizing scans of TGLF runs, where there are certain parameters (such as temperature and density scale length) that are coupled during the scans. This has been particularly useful for studying the low rotation limit of intrinsic rotation (DeGrassie).

Name: Colin Chrystal

I have used OMFIT to run TGYRO with TGLF for several discharges that were part of a study of momentum transport. The TGLF predicted momentum transport results were compared to experimental measurements. OMFIT was also used to perform 1D scans of TGLF output for example discharges to map out the potential differences between incremental transport in the heat and momentum channels.

Name: Joseph McClenaghan

I do pretty much all of my research through OMFIT. I have used OMFIT to perform TGYRO simulations of the DIII-D high β_p scenario and extrapolation of the scenario to ITER.

Name: Choongki Sung

I have used OMFIT for kinetic EFIT analysis and TGLF analysis. Using TGLF, I usually look at the linear growth rate changes of the most unstable mode. OMFIT was also used to perform power balance analysis through ONETWO. In addition, I have obtained the ExB shearing rate profile through the OMFITprofiles module.

Name: Xi Chen

I've tried out several OMFIT modules; the modules related to TGLF calculations and KineticEFIT (for L-mode) have been very helpful.

Name: Alessandro Marinoni

I've used OMFIT to streamline the analysis of transport data, from the computation of kinetic EFITs to interpretative and predictive TRANSP modeling as well as TGYRO simulations for model validation. Besides providing a very intuitive platform that is easy to use, OMFIT makes sure that all variables are in the right format when going from one code to another, which is especially valuable when codes use different radial variables that are all normalized to unity.

Name: Cristina Rea

I'm using OMFIT to build and analyze large databases (>2000 shots) of both disruptive and non-disruptive discharges in order to apply machine-learning techniques and eventually develop a successful disruption-warning predictor for DIII-D.

Name: Cami Collins

I've used OMFIT to generate multi-timeslice, monotonically evolving kinetic equilibrium fits and launch TRANSP runs. I use an analytic fit of the measured AE mode spectrum to determine the evolution of q_{min} as a function of time. I use this information in OMFIT as a basis for determining q_0 as a function of time, I use large error-bars on the fast-ion pressure, and I fine-tune the q -profile and match q_{min} mainly through adjusting the position of knots and small adjustments to current constraints. I then use the 'perfect' kinetic efits as input to a TRANSP run, and then I read the equilibrium, pressure, and plasma profiles from this TRANSP run to generate input files for the MHD eigenvalue solver code NOVA in order to find AE mode structures. The modes are then scaled to experimental ECE data, and these scaled amplitudes and mode structures, along with the TRANSP run, is the initial condition for PPPL collaborator

Mario Podesta's kick model. The kick model finds the relaxed fast-ion distribution function as a function of time by modeling AE transport through the NUBEAM module of TRANSP, so OMFIT has really helped to improve the accuracy of this model by getting the changing equilibrium (this is during the current ramp) as accurate as possible for many timeslices. The scaled NOVA modes from single timeslice kinetic efits have also been used by PPPL collaborator Roscoe White in his ORBIT code to calculate whether the AEs cause fast ion orbits to become stochastic.

Name: Theresa Wilks

I have used OMFIT to streamline pedestal analysis starting with profile fitting and kinetic efits to be used for varyped, ELITE, and BOUT++ pedestal calculations. A benchmark of varyped and ELITE calculations between using Tom's Tools and OMFIT has been completed, showing good agreement. However, there is some difference between Tom's Tools and OMFIT profiles and kinetic efits due to more available profile fitting methods in OMFIT beyond a tension spline as well as using TRANSP instead of ONETWO for the derived quantities used in kinetic efits. I have assumed the primary development role for the BOUT++ module and currently perform all of my BOUT++ simulations and most of the postprocessing through the OMFIT framework. It is possible to create a grid structure using the Hypnotoad program, modify input files, compile and run BOUT++ on a remote server, load the data back into the OMFIT project, and then perform post-processing plotting and analysis.

Name: Maiko Yoshida

I have used OMFIT to calculate kinetic EFITs and plasma transport on DIII-D plasmas. Some observations were compared to JT-60U results and reported at the Kyoto IAEA-FEC 2016. OMFIT is a very comprehensive tool which has enabled us to consistent transport analyses and plasma predictions. The tool is friendly and productive for a collaborator (like me). I also appreciate the supportive staff and tutorials.

GA Highlights

[Apr 14, 2017](#) OMFIT has been extended to allow users to interact with the distributed version control system 'git' from within the OMFIT framework itself. This is an important development, which streamlines the process of contributing to the physics modules and lowers the initial barrier to contributing to the OMFIT code-base. By leveraging GUIs, users can now contribute to the development of physics modules with minimal knowledge of the git version control system. The new capability allows users to import/export modules from and to multiple code repositories and development branches while handling the underlying complexity that can naturally arise with multiple people working on the same module simultaneously.

[Mar 24, 2017](#) A series of integrated simulations of China Fusion Engineering Test Reactor (CFETR) was performed in collaboration with University of Science and Technology of China (USTC) and Institute of Plasma Physics, Chinese Academy of Sciences (ASIPP) in Hefei, using the OMFIT framework. The CFETR workflows were improved to allow more comprehensive self-consistent core-pedestal-equilibrium coupled model that include particle, heating, and current-drive sources from the ONETWO transport code, profile evolution using the TGYRO transport manager with the TGLF turbulent and NEO neoclassical transport models, the EFIT free-boundary equilibrium solver, and the EPED pedestal width and height model. Three fully non-inductive CFETR Phase I and Phase II scenarios have been developed, which show that the CFETR Phase II scenarios can reach the goal of fusion power greater than 1000 MW with a bootstrap current fraction of greater than 85% at a q_{95} of 4.5. A new larger size CFETR design reduces the heating and current-drive requirements and lower divertor heat flux and neutral wall loading. Preliminary results indicate that the lower normalized beta of ~ 1.9 phase I configuration is stable to the ideal $n=1, 2$ MHD modes without a conducting wall, whereas the higher normalized beta > 3.2 Phase II configurations required a close conducting wall for stability. Future work will include self-consistent impurity and alpha-particle transport, pellet fueling, and a more self-consistent rotation source for turbulent suppression.

[Mar 24, 2017](#) For the first time, OMFIT has been used in the automated between shot analysis chain, in this case to manage the running of autoONETWO. Several improvements were made to the framework to enable this ability, and it opens the possibility of adding to the toolchain other OMFIT analyses such as auto-kineticEFITs or neural network calculations.

[Mar 17, 2017](#) The automated M3D-C1 capability within OMFIT has been exploited to perform 3D plasma response analysis during the run day of an experiment. A sequence from ELM suppression with 3D magnetic perturbations, at high rotation, to ELMing at lower rotation was produced on DIII-D. This sequence was analyzed with OMFIT workflows. A series of kinetic EFITs was created and input into the automated M3D-C1 analysis module. This allowed linear plasma response results to be obtained just hours after the experiment had been performed. These preliminary results indicated that the transition of the plasma from ELM-suppressed to ELM-free to ELMing correlated with a consistent decrease and inward shift of the peak resonant magnetic perturbation in the pedestal. This work demonstrates a valuable new tool for run-day interpretation and guidance of experiments.

[Mar 3, 2017](#) A second code-camp for developers of the OMFIT data analysis and modeling framework was hosted at General Atomics this week (Feb. 27-Mar. 3). In addition to numerous bug fixes and improvements to the framework itself, significant progress was made on a broad range of its physics modules. For instance, the TORAY module developed by M. Brookman is capable of setting up and running parallel TORAY simulations that are set up based on time-dependent profile reconstructions generated via the OMFITprofiles module. An Ion Cyclotron Emission (ICE) module was developed by K. Thome to analyze the 1TB/shot data collected by the DIII-D ICE diagnostic with an efficient algorithm to minimize memory usage. C. Rea continued the development of the DB_ANALYSIS module to leverage machine learning algorithms for investigating the correlation of time-dependent signals on experimental databases. B. Lyons updated the M3D-C1 module that he developed to enable post-processing of M3D-C1 simulations on local as well as remote workstations. The TRIP3D-GPU module has been further improved by G. Trevisan to support the execution and visualization of simulation ensembles, as well as to convert internally to OMFIT the original TRIP3D-GPU file format to NetCDF for reduced file size and improved performance. J. McClenaghan worked on integrating the Sauter model into the GA Systems Code module of OMFIT, and improving the module's neutron peaking calculation. The original TIMCON module by D. Eldon has been re-written by T. Wilks and N. Logan to use scaling laws to preview the range of obtainable power, torques, beta and rotation, as well as the effect of changing the beam voltages. The OMFIT TIMCON module will be used to support the work of DIII-D beam operators. The next OMFIT code-camp is scheduled to take place at GA the week of Aug. 21.

[Feb 24, 2017](#) Jai Sachdev from PPPL visited to work on development on the TRANSP code into the OMFIT workflow manager.

[Feb 3, 2017](#) The entire process for generating a SOLPS mesh has now been automated and integrated into OMFIT. Users need to know how to use the mesh generator software, but all intermediate steps to prepare the mesh for use are automated and invisible. New batch scripts have been written to take advantage of Iris's new "preemptable" queue, allowing unlimited jobs to run, but automatically saving their progress before they are terminated by the job handler. These scripts are currently tailored to SOLPS jobs, but they can be easily adapted for other codes.

[Jan 6, 2016](#) A new OMFIT module was developed that allows for automated running of the M3D-C1 extended-magnetohydrodynamics code. The module was developed with the help of the OMFIT code-camp (See Highlight from November 18 2016 at <https://fusion.gat.com/theory/Weekly1116>). Through an intuitive graphical user interface, the user is able to select equilibrium files, pre-process them according to M3D-C1 needs, and then select a variety of linear calculations to perform. OMFIT then launches the autoC1 python script on a specified server and the desired calculations are performed without additional user input. This capability will allow for automated stability and 3D response calculations for equilibria created within OMFIT and for simplified analysis of M3D-C1 results with other codes (e.g., TRIP3D, EMC3-EIRENE). It will also facilitate parameter scans required for uncertainty

quantification and verification & validation. Finally, this automated M3D-C1 capability may allow for between-shot linear stability and/or response calculations to help guide DIII-D experiments once between-shot kinetic EFIT is available.

[Nov 18, 2016](#) The first OMFIT code-camp took place this week at General Atomics, with up to 15 developers gathering each day in the GA-theory conference room. Each day started with a roundtable discussion where the participants reviewed the accomplishments of the day before, and stated their goals for the day. From this discussion, developers self-organized into small working groups, which efficiently made decisions and progressed in their code development. Co-location allowed more experienced developers to teach the best OMFIT development practices to less seasoned ones. Some of the technical highlights include: B. Lyons's extension of the OMFIT M3D-C1 module to enable routine execution of the code for linear stability and 3D response calculations; J. Candy's adaptation of the TGYRO module to support particle evolution of individual ion species; initial work by C. Holland to support visualization of GYRO results in OMFIT; development by T. Wilks of a new module to handle 2D SOL grid generations for the BOUT++ code and other modules; and C. Rea's development of a DATABASE module for directly interfacing SQL databases and machine learning libraries. Significant progress has also been made on the OMFIT profiles, TRANSP, and SCOPE physics modules, as well as the framework itself.

[Oct 28, 2016](#) Lei Shi (UC Irvine) visited GA this week to coordinate new collaborations that combine DIII-D's microwave imaging diagnostic capabilities and UC Irvine's expertise in gyrokinetic modeling. The proposed research includes using GTC to explore the impact of 3D RMP fields on turbulence in the edge plasma and comparing these simulations with ECEI and MIR data. As a graduate student at Princeton University, Lei Shi developed a suite of advanced 2D and 3D synthetic diagnostics to accomplish this comparison (c.f. RSI 11D303, 2016). Discussions included making these tools publicly available by way of the OMFIT analysis environment.

[Jul 1, 2016](#) Orso Meneghini participated in the EU integrated modeling code-camp in Prague. Over the course of two weeks OMFIT was interfaced with the European integrated modeling data system, so that data can be read seamlessly, manipulated, visualized and written to and from the EU platform. Furthermore, through OMFIT it is possible to execute the EU physics codes (commonly referred to as 'actors'), by means of their Python interface. In fact, this has been the first time that the Python interface was tested and used for realistic physics applications. For example, an OMFIT module for the CHEASE equilibrium actor was developed, and the ability to conveniently perform parametric scans was showcased in a live demo during the meeting. The OMFIT framework is now installed on the EU integrated modeling server ('Gateway server'), and the new functionalities have been tested by the camp attendees. With minimal effort, this work can be adapted to the ITER integrated modeling data structure, IMAS, which shares many similarities with the EU system.

[Jun 10, 2016](#) A comprehensive module developed by David Eldon (PPPL) and David Green (ORNL) to set up, execute, and post-process scrape-off layer simulations from the SOLPS code has been implemented in OMFIT. The module can run the B2.5 standalone or the B2.5+Eirene coupled version of SOLPS. A convenient graphical interface allows editing of the model boundary conditions, transport coefficients and other key simulation parameters. The module also seamlessly supports the code's ability to restart a completed run, and thus incrementally progress towards the achievement of a converged solution. All of the SOLPS outputs are gathered within the OMFIT tree data structure and, at the click of a button, users can interactively visualize and customize quantities in 2D, as well as plot them as function of time and space. The module implementation supports single and double null equilibria. An interface to NERSC's TaskFarmer technology allows the convenient spawning of multiple instances of SOLPS to be executed in parallel. Multiple runs can then be managed, analyzed and compared all within the OMFIT module. Current development is focusing on easing the simulation setup for DIII-D shots as well as automating the inference of the transport coefficients given a set of experimentally observed profiles.

[Apr 29, 2016](#) Jakub Urban (IPP Prague), the developer of the WOwflow framework in Python (WOWP), visited the GA theory group for two weeks to embed the WOWP software into OMFIT. WOWP is a workflow engine that adopts a data-driven workflow execution. The various components of the workflow, called actors, are organized into an oriented graph. The resulting graph allows the workflow engine to automatically execute the actors based on their data-dependencies. Furthermore, the framework can naturally take advantage of the graph knowledge to execute components in parallel, when that is possible, thus greatly simplifying the task of leveraging high performance computing platforms for the execution of complex workflows. The OMFIT and WOWP frameworks are complementary to one another, and their integration greatly enhances each other's capabilities. With Dr. Urban, OMFIT was also installed at IPP Prague and was further extended to work with the COMPASS experimental database (CDB). Profile reconstruction of the experimental COMPASS tokamak data was achieved using the OMFIT profiles module, thus providing the first step towards kinetic equilibrium reconstructions for COMPASS.

[Feb 5, 2016](#) We have begun modeling high power AT plasmas with SOLPS. The goal is to make contact with experiments in AT plasmas with radiating divertors and then extrapolate to predict the effects of increasing DIII-D's auxiliary power to 30 MW. OMFIT is being used to manage SOLPS runs in order to improve transparency of the workflow and conveniently apply post-processing analysis to the SOLPS results. The OMFIT implementation of SOLPS now runs the full coupled B2.5+Eirene case and parses the results. Progress is being made on the post-analysis toolset.

[Feb 27, 2015](#) Ideal stability limits have been evaluated for a series of steady-state hybrids with DN upward-biased shape, and compared to the available DN downward-biased database. The with-wall limits are ~10% lower for the DN, upward-biased cases, which also have slightly lower density. The same analysis has been done for LSN Hybrids with RMP for ELM suppression, and the betaN limits are found to be in the same range as the DN cases (beta_lim~3.5-4.8). DCON modeling for these shots shows that reducing the outer gap and optimizing the outer squareness leads to improved beta limits of beta_lim<=6. An OMFIT based tool has been developed to obtain these results and it will be available for general use in the next months.

[Dec 12, 2014](#) A new module for the OMFIT framework has been developed by long-term theory group collaborator O. Izcard (UCSD) that allows the user to set up, remotely execute, and analyze, simulations using the BOUT++ code. Remote execution can be on a variety of systems including the TSCC cluster at UCSD, the DROP cluster at GA and the Hopper machine at NERSC. The initial focus of this OMFIT module has been on use of BOUT++ to simulate interactions of tearing modes and microturbulence in reduced models, as part of a UCSD theory effort. It will be extended for use with various Braginskii and gyrofluid models in BOUT++ in the near future, in support of both the AToM integrated modeling SciDAC project, and separate UCSD and GA research initiatives. Initial results obtained using this module were presented at the 2014 APS-DPP meeting, as well as the "BOUT++ and OMFIT" mini-workshop held in October at LLNL.

[Aug 15, 2014](#) James Penna from MIT has concluded his NUF internship at GA. This summer James developed a module within the OMFIT integrated modeling framework to enable time-dependent evolution of the plasma transport and equilibrium solution in a self-consistent manner. The workflow allows incorporating time-dependent changes to the equilibrium and heating sources, reflective of how an experimentalist would introduce changes during an experiment. The transport solution is calculated within the ONETWO code using a Neural Network transport model that has been recently developed (see Highlight from May 9 2014). The EFIT equilibrium code provides the equilibrium solution. The neural network transport model is computationally very efficient, and 200 milliseconds of plasma evolution can be calculated in less than 10 minutes. Preliminary simulation results showed good agreement with experiment. This work sets the basis for enabling predictive simulation planning of DIII-D shots.

[Jun 13, 2014](#) A new version of OMFIT is ready to be released (v.0.4.10). New versions of the OMFIT integrated modeling framework have been regularly released on an almost-monthly basis. Since the last major release, several updates have been devoted to extending the framework's capabilities, refining the interactive graphical user interface, and expanding and improving the physics modules. The framework has been extended to interface with batch queuing systems, enabling resource allocation and job management on high performance computing (HPC) systems. Presently OMFIT features 30 publicly available modules, covering a broad range of topical areas. Development of an IPS module has demonstrated the capability of managing and executing Integrated Plasma Simulator (IPS) workflows via OMFIT. Recently, two workshops have taken place at GA to illustrate OMFIT capabilities in the area of kinetic equilibrium reconstructions and transport analyses. The latest tutorial has been recorded and remotely broadcasted.

[Dec 6, 2013](#) In an effort to strengthen the GA integrated modeling capabilities with respect to ITER, the OMFIT framework has been extended to enable compatibility with the Integrated Tokamak Modeling (ITM) framework developed by the ITM Task Force (ITM-TF) in Europe. A prototype ITER Integrated Modeling Framework and its associated data model are being developed by ITER based on the ITM framework experience. The ability to set up and execute a simulation and access the ITM data with OMFIT was demonstrated. In principle, all the codes adhering with the ITM-TF standards could be executed from within OMFIT. The OMFIT framework then provides an interface between the software developed at GA and the ITM framework.

[Oct 25, 2013](#) The OMFIT framework has been updated to handle I/O of the BOUT++ files. The BOUT++ code is a modular framework designed for simulating plasma fluid models in curvilinear geometry. A new BOUT++ module for OMFIT is being developed. The new module was used to simulate the evolution of an unstable tearing mode in a slab geometry and the results have been verified against analytic

predictions of the tearing mode growth rate. Simulations were executed both on GA workstations and on NERSC supercomputers. In the future, the BOUT++ module in OMFIT will be expanded to investigate ELMs and filament dynamics in the edge of the DIII-D plasma.

[Sep 6, 2013](#) The OMFIT integrated modeling framework has been extended to enable analysis of DIII-D kinetic profiles in the presence of ELMs. This was achieved by binning and organizing the experimental data as a function of the ELM cycle. A GUI guides users throughout this process. The resulting electron density and temperature profiles can be used in any of the OMFIT modules. For example, ELM-aware kinetic EFITs have been used to assess the edge stability of DIII-D discharges. The experimental pressure and current profiles at the edge of the experimentally reconstructed equilibrium is perturbed via the new VARYPED module in OMFIT. The stability of the resulting set of equilibria is then tested with the ELITE code (also a new OMFIT module). Results compare well with previous findings and show that the steep experimental profiles occurring before an ELM crash are indeed at the boundary of the stability limit.

[Jun 7, 2013](#) Preliminary studies show that a multi-layer feed-forward back-propagation neural network, trained over a large database of DIII-D data is able to predict to a large degree the heat transport profiles observed in the DIII-D experiments, from the core to the near edge of the plasma at $\rho = 0.95$. For applications such as plasma control, between-shot analyses, or parametric studies, it is necessary to use a solution method that can provide quick turnaround and high throughput. At present, high fidelity numerical models such as GYRO and TGLF require a large amount of computational resources and are thus not suitable for such applications. An alternative approach that uses neural networks to efficiently compute electron and ion heat fluxes is currently being explored. Once the neural network is built, the numerical cost of evaluating the transport coefficients is minimal and the evolution of the temperature profiles can be done efficiently. The predictions of the neural network model are not limited to the availability of experimental training data. For example, for future devices and previously unexplored regimes, a database of TGLF or GYRO simulations could be used. The OMFIT modeling framework provides the infrastructure for building and training the neural networks on the experimental DIII-D data and is used to compare neural network predictions with those from theory-based models as well as against the experiments.

[May 3, 2013](#) A workflow has been implemented within the OMFIT framework to find self-consistent steady-state scenarios for DIII-D. An important tokamak integrated modeling application is the development and design of baseline and advanced operation scenarios using validated equilibrium, transport, stability, and pedestal physics models and available heating and current-drive sources. The OMFIT framework is particularly well suited to support this type of integrated modeling activity. Typically, the workflow starts with a reconstruction of the experimental equilibrium, sources and transport (a 'kinetic EFIT'). Predictions of the kinetic profiles are subsequently carried out using the TGYRO transport code (using TGLF/GYRO and NEO for the turbulent and neoclassical transport). Self-consistency between the profiles predictions and the equilibrium is obtained by iterating the kinetic profiles and equilibrium between TGYRO and EFIT. As a test application, both an L-mode and H-mode DIII-D discharges have been modeled. Initial results are promising, as a consistent solution could be found within a few iterations.

[Feb 15, 2013](#) As part of the study to evaluate different 3D coil upgrades, the potential of proposed coil sets to control the plasma rotation via neoclassical toroidal viscosity (NTV) was evaluated using the

two-fluid MHD code M3D-C1 and the NTV module within the OMFIT framework. In an ITER similar plasma, the total NTV torque produced by the I-coil was the largest by more than a factor of 2. An internal coil mounted on the centerpost (CP-coil) and a coil similar to the I-coil located outside the toroidal field coil (O-coil) were found to produce the least torque.

[Oct 19, 2012](#): Recent developments to OMFIT (One Modeling Framework for Integrated Tasks) have facilitated its use in a variety of DIII-D applications. OMFIT is a development environment aimed at easing the integration among different codes. The OMFIT framework has been used for control-room analysis of gyro-kinetic stability and MHD stability of non-inductive, high q_{min} , H-mode experiments. Recently the OMFIT framework has been used to test the RMP-induced magnetic flutter transport model with the DIII-D experiments and to compare the experimentally measured torque with predicted Neoclassical Toroidal Viscosity models using data from the two-fluid MHD code M3D-C1. Recent developments of the framework include: The ability to run the code in parallel, both locally and remotely, possibly on multiple machines; direct access to PTDATA in addition to MDS+; comparison and merging of files/modules/projects; descriptions of variables based on an innovative context-based system; support for the LLNL PDB and GA input files. Also the GKS/TGLF gyro-kinetic stability and the ONETWO/GCNMP and FASTRAN transport modules are available. Finally the ability to interactively edit plots generated within OMFIT has been added, which speeds up the process of data analysis and production of publication quality graphics.

[Jun 22, 2012](#) The most recent version of the GATO mapping and ideal stability code was placed in the SVN subversion control system and is available publicly. In addition to some minor bug fixes, the newest version includes a few enhancements to make the mapping more generally useful as a stand-alone interface to other stability codes. An option is now included to read an input electron number density profile expressed as a function of an arbitrary radial variable; typically, for example, the profiles from GAPROFILES are given in terms of the square root of the toroidal flux. The coding for including the fast ion pressure profile was also rewritten to allow the profile to be expressed in terms of any radial variable. Calculations for the pedestal and total stored energy, the local field line pitch at each mesh point, were added, and an option is included to set the single point axis q to a specific value to circumvent numerical issues on axis. A module to run GATO under the new OMFIT integrated modeling framework has also been put together.

[May 25, 2012](#) OMFIT (One Modeling Framework for Integrated Tasks) is a new software package developed to support integrated modeling and experimental planning. The OMFIT framework provides a consistent way to access and manipulate collections of files, data, and scripts a heterogeneous objects, independent of their origin. Such uniform structure allows the definition of a single top-level Graphical User Interface (GUI), to manage tree objects, carry out simulations, and analyze data interactively. OMFIT has the ability to understand many scientific data formats, and integration with MDS+ tree allows direct manipulation of the experimental data. In OMFIT modeling tasks are organized into modules, which can be easily combined to create arbitrarily large multi-physics simulations. The current version of OMFIT includes modules for magnetic, MSE, and kinetic constrained equilibrium reconstruction (EFIT), transport (ONETWO), stability (PEST3) and ray-tracing (GENRAY) analysis. Creation of new modules and customization of existing ones is encouraged and simplified by the availability of high level Python Application Programmer Interfaces (APIs) for the execution of codes on remote servers and creation of application specific GUIs. Visualization of experimental and modeling data is possible within OMFIT, for both quick analysis and publication.

PPPL Highlights

Mar 3 2017: L. Cui, assisted by F. Poli, has developed an interface in OMFIT for running the lower hybrid current drive modeling code LSC for TRANSP simulations of DIII-D discharges. This new capability is being used to investigate the effectiveness of current drive in super H-mode discharges. As the TRANSP interface in OMFIT is machine-independent, the new LSC capability in OMFIT is now also available for all tokamaks.

Mar 3 2017: D. Battaglia visited DIII-D to collaborate with S. Haskey on further developing the XGC0 simulation capability for interpreting DIII-D main-ion CER measurements using the OMFIT framework. Significant progress was made on generating synthetic diagnostic outputs allowing straightforward comparisons between the simulations and experimental measurements.

Feb 24 2017: Jai Sachdev visited General Atomics to coordinate efforts for TRANSP analysis and simulations using OMFIT. Meetings were held with key OMFIT developers and TRANSP users at DIII-D to discuss research needs and future plans, including Sachdev's primary activity for pellet injection and ablation modeling using TRANSP. During the visit, Sachdev was able to successfully run TRANSP through OMFIT for NSTX plasmas by following the online tutorials, and establish computer access to DIII-D servers and submitted TRANSP runs through the Open Science Grid.

Feb 10 2017: Lang Cui and Carlos Paz-Soldan ran TRANSP, kineticEFITs, and the GPEC code to optimize the $n=2$ I- and C-coil currents to maximize the resonant torque on a new plasma equilibrium. The predictions obtained were qualitatively validated in the experiment, with large breaking and transport resulting from the optimal predicted resonant coupling. This work represents a significant advance in the integration of between shot predictive modeling of the plasma response to 3D fields. The OMFIT framework's efficient integration of tokamak profile fitting, TRANSP, EFIT, and GPEC as well as a new BEAST mode for between shot TRANSP analysis at DIII-D enabled this new control room capability.

Jan 20 2016: B. Grierson has upgraded the OMFIT TRANSP module to include input profiles from the Osborne python Pedestal tools, which are popular for constructing ELM-synchronized profiles for detailed pedestal stability analysis. The capability increases the flexibility of TRANSP analysis for resolving the evolution of pedestal transport in the inter-ELM phase.

Jan 6 2017: A new workflow for preparing, executing and visualizing XGC0 simulations has been developed and publicly released through the OMFIT framework by Shaun Haskey, Devon Battaglia, and Brian Grierson. This XGC0 module will be used to

interpret changes in edge main-ion rotation for existing analyzed data and to support upcoming experiments in the DIII-D rotation research thrust that focus on a predictive understanding of intrinsic rotation. The XGC0 module leverages existing workflows for kinetic equilibrium reconstruction, plasma profile analysis and TRANSP transport calculations for the geometry, background plasma profiles, and heat, particle and momentum sources. Simulations are submitted to NERSC Edison and steered through a graphical interface, enabling rapid and streamlined workflow for interpretive transport and model validation.

Dec 8: L. Cui visited Institute of Plasma Physics Chinese Academy Of Sciences (ASIPP) in Hefei and the EAST Tokamak. She had a meeting with S.Ding, J. Chen and H.Du, going through the workflow in OMFIT for KineticEFITtime. EAST shows lots of interest in the capability of TRANSP + OMFIT. And later on, Ding gave a presentation to propose the application of OMFIT+TRANSP workflow on EAST data.

Dec 6 2016: L. Cui visited the South West Institute of Plasma Physics in Chengdu and the HL-2A Tokamak . She gave a seminar titled "Energy Confinement Recovery Observed in DIII-D Plasmas with Resonant Magnetic Perturbations" . Lang gave a follow up presentation on TRANSP + OMFIT based on strong interest from the researchers in transport modeling for HL-2A.

Nov 18 2016: B. Grierson, N. Logan and S. Haskey attended the OMFIT developers "Code Camp" this week to focus on improving existing physics modules and developing new capabilities for emerging analysis needs. This opportunity was used to improve the algorithms for aligning the plasma profiles (Te, Er) to the separatrix for accurate edge equilibrium reconstruction and stability analysis, develop a tutorial for kinetic equilibrium reconstruction on NSTX, and implement goodness of fit statistics for the profile fitting packages provided by the OMFIT framework.

Nov 11 2016: N. Logan has used the Generalized Perturbed Equilibrium Code (GPEC) to calculate the evolution of the MHD stability, 3D plasma response and neoclassical toroidal viscosity for a high q DIII-D scenario with plasma pressure near the macroscopic MHD stability limit. The results show a clear kinetic stabilization of the plasma as the pressure increases above the no-wall limit, where the ideal models predict instability. This kinetic stabilization allows the calculation of finite plasma response and NTV torque above this limit. This analysis made extensive use of the new implementation of GPEC in the OMFIT integrated modeling framework for preparing the inputs, running the models, and visualizing the outputs.

Oct 28 2016: B. Grierson attended the ITPA Transport and Confinement meeting in Naka, Japan and delivered two presentations. The first presentation was on DIII-D and multi-machine scaling of the plasma intrinsic torque with normalized minor radius, ρ^* , as well as the application of the scaling results and quasi-linear modeling of the performance impact for ITER. The second presentation displayed a general database creator toolkit implement in OMFIT, which provides access to MDS+ time histories, as well as 1D plasma profiles, EFIT variables, and TRANSP runs. Databases are easily created and visualized for more sophisticated analysis such as fitting dependencies and regressions.

Oct 7 2016: The user base for TRANSP on DIII-D has recently seen a large increase through implementation of TRANSP and a new profile analysis tool as a module in the OMFIT workflow manager. On DIII-D alone we have a 300% increase in new users. This is due in large part to the streamlined data preparation and powerful visualization tools embedded in the OMFIT workflow and integrated into the TRANSP analysis tools. Presently, TRANSP runs are being submitted for Alcator C-Mod, NSTX, JET and DIII-D through OMFIT. Due to OMFIT's general support for arbitrary tokamaks, a generalized approach is implemented for initializing TRANSP runs on multiple machines, each with their own unique diagnostics, timebases and legacy settings. Brian Grierson attended a video conference with Alcator C-Mod and JET to strategize on a more powerful implementation of TRANSP in OMFIT that preserves backwards compatibility, and produces a more intelligible and uncluttered namelist for new runs. The present version of the TRANSP module in OMFIT will be demonstrated to the JET team this week, with the implementation of the more general tokamak namelist software in the coming weeks.

Aug 5 2016: A. Ashourvan was recently hired under B. Grierson's Early Career Award to test models of intrinsic rotation generation and momentum transport using the main-ion CER capability on DIII-D. Ashourvan and T. Stoltzfus-Dueck (Princeton) have recently implemented the intrinsic velocity prediction model developed by Stoltzfus-Dueck (PRL 2012) into OMFIT. The model uses the plasma equilibrium geometry (X-point, q95) and pedestal scale length as a proxy for the turbulence intensity to predict the toroidal velocity at the top of the pedestal. A set of DIII-D ECH H-modes and balanced NBI conditions have been identified for validating this model.

Jul 29 2016: A re-design for the OMFIT TRANSP workflow has enabled support for multiple tokamaks by providing both general OMFIT-supported equilibrium and profiles, as well as device-specific fetching of equilibrium and profiles from MDSplus or other machine specific data storage. This enables support of both JET and C-Mod tokamaks, with B. Grierson and O. Meneghini coordinating with scientists from JET and C-MOD. The implementation has also incorporated the between-shot DIII-D profile analysis tool "ZIPFIT," which permits TRANSP submissions immediately after the diagnostic data is automatically fit after each DIII-D shot.

Jul 22 2016: N. Logan has developed a new module within the OMFIT integrated modeling framework for preparing the inputs, executing the models, and visualizing the outputs of the Generalized Perturbed Equilibrium Code (GPEC) suite. This complements the recent public releases of profile, TRANSP and kinetic equilibrium analysis tools. It also furthers the capabilities of current users TRANSP to analyze the time dependent plasma response to 3D fields. This will see immediate application in calculating the time evolution of the plasma stability using DCON. In the long term, it will enable the integration of 3D plasma response and NTV torque with established TRANSP workflows.

Jul 1 2016: The TRANSP submission through OMFIT has been upgraded to enable inclusion of time- dependent mirror steering of gyrotrons for DIII-D. Feed-forward and real-time feedback gyrotron aiming has been used in DIII-D for optimization of NTM control as well as catch-and-subdue NTM suppression studies. Previously, TRANSP preparation utilities only allowed time-static mirror angles. The upgraded TRANSP module fetches all gyrotron power history and mirror aiming and prepares the UFILE inputs and TORAY namelist for power balance and auxiliary current drive.

Jun 24 2016: B. Grierson presented a live demonstration of data preparation, submission, and visualization for TRANSP analysis enabled by OMFIT. Colleagues from JET, ASDEX, and JAEA attended the demo that was broadcast live to the 2016 EUROfusion code camp in Prague on integrated modeling. The camp covered MSE-constrained EFIT, profile analysis, TRANSP, and kinetic (pressure and current constrained) equilibrium reconstruction. The OMFIT integrated modeling workflow also seamlessly transitions to model validation by using TGLF embedded into PTSOLVER. Discussions are ongoing for collaboration between OMFIT developers and JET for using OMFIT to manage TRANSP analysis.

Jun 24 2016: L. Cui presented a talk at the DIII-D Pedestal/ELM meeting on transport modeling of RMP ELM suppressed plasmas in DIII-D. The analysis attempted to explain the long-term recovery of confinement in RMP plasmas on DIII-D and the implications for ITER. Cui used the OMFIT workflow to fit time dependent profiles, run TRANSP and predictive TGLF runs to compare to experiment. Results indicate that the confinement recovery following density pumpout is driven by the increase in the edge T_i and core transport stiffness. The increase in the edge T_i is understood qualitatively from the increase in the ion thermal heat flux due to the reduction in the plasma density.

Jun 17 2016: B. Grierson has developed a new predictive TRANSP interface within the OMFIT workflow manager that is now publicly available. Users will now be able to submit predictive TRANSP simulations to compare experimental temperature, density, and rotation measurements with model-based predictions from GLF23, multi-mode model and TGLF. Scenarios from recent experiments on DIII-D are being studied with this new capability including electron heated ITER baseline, hybrid, and high beta-poloidal plasmas. This OMFIT based workflow streamlines the typically labor-intensive process of repeating an interpretive transport analysis with fluid variables based on transport models, and enables self-consistent time-dependent transport- equilibrium solutions that are unavailable within other frameworks. Through OMFIT, users with permission to access TRANSP's predictive transport solver (PT_SOLVER) can now enable this feature at the click of a button, selecting which model to use and which transport channels are simulated. Default name lists are loaded, depending on the selected transport model, with settings confirmed by the model developers. This public, community-vetted workflow ensures consistent usage of transport models for validation studies across users and machines.

Jun 3 2016: M. Churchill and D. Eldon are attending the PSI meeting and giving presentations on their DIII- D boundary plasma work. M. Churchill is presenting kinetic simulations of the SOL using the XGCa code for a sheath limited discharge. The simulations have successfully predicted strong parallel flows of the order observed in experiment, with the next step aimed at benchmarking with the SOLPS fluid code. D. Eldon is presenting a poster on the integration of the SOLPS code into the OMFIT workflow that allows rapid execution of SOLPS runs. He is also presenting results on heat flux simulations in DIII-D using SOLPS to assess the effects of increased heating power on DIII-D.

May 27 2016: New capabilities for integrated modeling and “predict first” initiative have matured in OMFIT, with users now being able to submit predictive TRANSP runs using GLF23, MMM, and TGLF models from the OMFIT TRANSP module. B. Grierson and L. Cui have successfully implemented this capability in OMFIT. The predictive TRANSP solver “PT_SOLVER” is also available as a standalone module for single time slice analysis for predictions of T_e , T_i , density and momentum transport. These new features were demonstrated by B. Grierson at the TRANSP developers meeting on May 27.

May 13 2016: T. Stoltzfus-Dueck visited DIII-D from May 9-13 to work with the main ion CER group on physical mechanism of intrinsic rotation generation in the plasma edge. An analytic model for edge intrinsic rotation was integrated into OMFIT in preparation for testing of the model on the existing edge main ion shot database. At the Friday

science meeting, T. Stoltzfus-Dueck also presented theoretical issues relating to the L-H transition.

May 6 2016: The OMFIT suite of modules for preparing, executing and visualizing TRANSP analysis has been upgraded to include TRANSP “ACFILE” output that includes the neutral beam fast-ion distraction function, beam ion birth profiles and beam neutral density for use in fast-ion studies. This new capability improves the efficiency of displaying fast-ion related quantities relevant to experiment and facilitates the development of an integrated workflow within OMFIT for fast ion physics studies.

Apr 29 2016: A new workflow in OMFIT has been developed by B. Grierson to produce impurity transport coefficients derived from the TGLF model for arbitrary ion species and charge. These impurity transport coefficients (D and V) are then used directly in the OMFIT STRAHL module for predicting experimental charge-exchange and soft X-ray signals for diagnostic systems. The workflow is being used to both validate the TGLF transport model with existing data inside a nonlinear optimization loop, as well as feed-forward predict the expected signals for upcoming impurity transport studies (including tungsten) and diagnostic system upgrades. The workflow is general, where any tokamak that is supported by OMFIT equilibrium and profile analysis can use the workflow for validation and experimental planning.

Apr 15 2016: S. Haskey has been working with L. Stagner (UC Irvine) on including a new release of the FIDASIM code in OMFIT. The FIDASIM code is used to forward model the main ion CER measurements on DIII-D and calculate corrections to the apparent main ion temperature and velocity due to cross-section, geometry, and halo effects. Stagner has implemented several enhancements in the new version of the code, which significantly improve the forward modeling capability for the main ion CER system. The new version of the code is also an order of magnitude faster, significantly increasing the speed at which the main ion CER analysis can be performed.

Mar 25 2016: D. Eldon is developing an OMFIT module to manage and interpret SOLPS runs. The OMFIT module will interactively set boundary conditions for the SOLPS run using a visual interface. The module will then perform parameter scans by launching parallel runs and provide visualizations of the output which will help the user gain insight from the simulations.

Feb 26 2016: PPPL researchers N. Logan, B. Grierson, and S. Haskey have added a new feature to the OMFIT profiles module that uniformly handles the time base differences between various diagnostics and equilibria. In conjunction, there is a new EFIT time module that better handles running EFIT for many times, and a kinetic EFIT time module that can incorporate constraints from the OMFIT profiles and TRANSP

modules in generating EFITs. Grierson, Logan, and Haskey have been added as core developers of OMFIT.

Feb 19 2016: The first TRANSP analysis of DIII-D discharges with deuterium main-ion CER measurements have been successfully completed and used to determine the diffusive momentum transport coefficients of the main ions. In the H-mode, the impurity toroidal velocity can be non-monotonic in the steep gradient region even in the presence of large beam torques, and this would indicate a negative effective momentum diffusivity. However, the main-ion toroidal rotation is monotonically decreasing in these plasmas, indicating that the inference of negative diffusivity is an artifact of the impurity measurement. The consequences of using impurity versus main-ion rotation for experimental momentum transport and model validation will be presented at the 2016 Transport Task Force (TTF) by S. Haskey, who has implemented main-ion CER in the OMFIT workflow.

Feb 12 2016: N. Logan presented a talk at the DIII-D Friday Science Meeting indicating PPPL and OMFIT user group efforts to develop an alternative time-based profile data analysis system that overcomes many of the limitations of single time slice analysis that has been used at General Atomics for several decades. The new capability will enable much more efficient and consistent analysis of profile data for preparation of time dependent analysis including TRANSP.

Feb 5 2016: S. Haskey has implemented an E_r module as part of the new OMFIT profiles analysis package. Measurements from the vertical impurity CER system are now corrected for the toroidal velocity component before being used with impurity pressure and toroidal rotation profiles to calculate E_r . The pressure, poloidal rotation, and toroidal rotation contributions to the E_r profile are plotted individually as a function of time allowing better understanding of the role of the various terms throughout the evolution of a discharge.

Jan 15 2016: During the 2016 DIII-D experimental campaign the main ion CER system has been acquiring data over a wide range of plasma parameters and new tools are being developed to rapidly calculate the impurity and Deuterium rotation, temperature, and density. S. Haskey and B. Grierson are developing OMFIT tools that significantly streamline calculations of the impurity and main ion profiles compared to existing tools.

Oct 2015: B. Grierson and S. Haskey have implemented several improvements aimed at simplifying the fitting, analysis, and viewing of data from the main ion CER system on DIII-D using the OMFIT tools. This enables experimental data to be easily compared with simulations from FIDASIM within OMFIT. Additionally, several improvements have been made to the FIDASIM module in OMFIT, which allow the code to be run using the

job scheduler on Venus. This leverages the power of the cluster to perform substantially faster runs than previously possible. These developments enable improved throughput and model comparisons for physics studies using the main ion data CER data.

Sep 11 2015: A new TRANSP module has been released within the OMFIT integrated modeling framework. The module provides a powerful visual interface for the TRANSP code, enabling a wider user-ship of TRANSP in the DIII-D program. A single interface guides the user through the steps necessary to prepare the input data, run the code, inspect output and perform post TRANSP analysis. The module was developed by N. Logan and B. Grierson with strong support from the GA OMFIT developers.

Aug 7 2015: B. Grierson and S. Haskey succeeded in acquiring the first measurements in the H-mode pedestal from the recently upgraded edge main-ion CER diagnostic. Pedestals with the steep pressure gradient region aligned in the middle of the diagnostic channel array are being processed for measurements of the deuterium ion temperature, density and toroidal velocity. The measurements are also being simulated with the FIDAsim diagnostic simulator. Initial indications are that the deuterium profiles are well resolved with sharp spatial features, particularly in the density pedestal. Near the plasma boundary, clear and large differences in the toroidal velocity between deuterium and carbon have been observed, with deuterium being more positive in the co-current direction. Discharges have been acquired in L-mode, H-mode and matched plasma conditions with both directions of the toroidal field. A new workflow established in OMFIT is enabling rapid processing of the main-ion CER data for comparison to neoclassical velocity calculations with NCLASS and NEO.

Jun 26 2015: B. Grierson and OMFIT developers have implemented a new equilibrium analysis tool to produce error estimates for quantities such as P' , FF' , current density, q-profile and shear by Monte-Carlo trials on the input data. Given an EFIT reconstruction, the measurements (magnetics, MSE pitch-angles, diamagnetic flux, etc.) and constraints (pressure, edge current density) are randomly varied within their uncertainties, and a new equilibrium produced. This workflow provides an arbitrary number of EFIT reconstructions that satisfy the measurements, as well as an ensemble mean and standard deviation. These equilibria are being used for uncertainty quantification for transport model validation in DIII-D ITER Baseline discharges with dominant electron heating by constructing a set of TGYRO solutions using TGLF+NEO with perturbed equilibria.

Mar 27 2015: B. Grierson completed the second week of his visit to PPPL to attend the international TRANSP users group meeting and provide demonstrations of the OMFIT

workflow for modeling tasks. The current application of TRANSP at DIII-D for interpreting experiments, and well as transport and equilibrium model validation was presented, with examples of time-dependent simulations of free boundary equilibrium and core profiles from TGLF for the DIII-D ITER Baseline. General Atomics researchers, Orso Meneghini and Sterling Smith, also presented the use of TRANSP for kinetic equilibrium reconstruction on DIII-D and NSTX using OMFIT.

Detailed OMFIT Usage (as of 13 Feb 2017)

Hosts Where OMFIT Has Run

OMFIT has been run on the following **79** hosts:

Brians-MacBook-Pro.local, Camerons-MacBook-Pro-4.local, F-C02J329HF, F-C02NQ2GYG, F-C02PJ2F5F, F-C02R42ALG, F-C02RD1G1G, F-C02RV2JAG, F-W8924XCM6, MacProPRF.local, Oliviers-MBP-2, Oliviers-MacBook-Pro-2.local, abacus, adwiteey-HP-ProBook-650-G1, adwiteey-N550RN, adwiteeymauriya, banach, bgrierson-It, bgrierson-It.local, cab687, delphi2.gat.com, dhcp5.gat.com, edge, fred.localdomain, fusion, guest8.psfc.mit.edu, head, krul, lac.epfl.ch, localhost.localdomain, lohan1.gat.com, mac-s-smith.local, macterm186-3.local, macterm186-4.local, macterm186.attlocal.net, mag-198-129-104-212.gat.com, mag-198-129-104-230.gat.com, mag-198-129-105-101-gat-com, mag-198-129-105-101.gat.com, mag-198-129-105-21.gat.com, mag-198-129-105-230.gat.com, mag-198-129-105-27.gat.com, mag-198-129-106-205.gat.com, mag-198-129-106-236.gat.com, mag-198-129-107-58.gat.com, matthijs-Erazer-P6661-MD99716, maxbook.local, n9287103.llnl.gov, newt, nlogan-It1, node05.cluster, node06.cluster, orpheus, phoebe, shaskey-It, shenma13, sws25.psfc.mit.edu, tokguest177.guest.tok, tonks, tsf-428-wpa-7-147.epfl.ch, tsf-436-wpa-6-158.epfl.ch, tsf-460-wpa-1-011.epfl.ch, tsf-460-wpa-3-092.epfl.ch, tsf-460-wpa-4-251.epfl.ch, tsf-460-wpa-7-190.epfl.ch, uja, vbox

Overall Modules Sorted by Number of Imports

Note: This statistic only counts the time that a module is imported into a project for the first time. Once in a project, the same module can be used for multiple OMFIT sessions, for an extended period of time. Also, there are some modules that import other modules at import time (for instance the kineticEFIT module imports at least 10 other submodules, including the EFIT module), and the import of those modules as submodules is not counted here.

1799 kineticEFIT
1760 OMFITprofiles
1644 kineticEFITtime
1144 TRANSP
890 TGYRO_GACODE
851 EFIT
632 MyInte
555 MyInte_imp
552 TGLF_scan
456 kineticEFITmulti

380 EPED
364 SCOPE
348 ForW
318 SOLPS
314 VARYPED
292 ONETWO
277 ELITE
184 TGLF_GACODE
181 STRAHL
179 EFITtime
172 GKS
169 TRXPL
154 FIDASIM
145 auto_kEFIT
134 TRIP3DGPU
129 EFIT_lzy
129 GAprfiles
127 GATO
114 PROFILES_GEN_GACODE
114 BOUT++
110 TEQ
105 ALCON
105 profiles
89 Osborne_profiles
86 MainIonData
82 FIDASIM_V1.0
81 EFDB
81 NIMROD
73 Boundary_Toolbox
72 20160525
71 M3DC1
68 ELMremoval
66 EAST_EXP
62 2POINTSOL
61 IOL
58 GPEC
57 PT_SOLVER
51 COGENT
44 OMFIT_GDT
42 FIDA
41 FIAT
40 ONETWOtime
39 MODIFY_SHAPE

38 ZIPFITprofiles
38 TORAY_SCAN
33 fastTS
33 XGC0
33 HARVEST
30 BOUT++manager
28 TGLF_SCAN
28 ELMprofiles
28 PEST3
28 DISRUPTIONS
27 reOrbit
27 desireflux
25 TUTORIAL
24 TORAY
23 NUBEAM
23 Den_on_turb
23 UEDGE
22 ADAS
22 GENRAY
22 BRAINFUSE2
21 BPMIC_COMMAND_CENTER
21 OEDGE
20 CALTRANS
20 SURFMN
19 DivSol
19 fluxFIT
18 density_shelves
16 ONETWO-JTEXT
15 BIRTH
14 Langmuir_Probes
14 ELITE-ZYR
14 MagneticFlutter
13 PCS
12 GAprfilestime
11 MyInte_W
11 TIMINGS
11 FREYA
11 Cql3d
11 BES
10 Stiffness
10 FASTRAN
10 JLB_TEST
10 HeFei_server

10 MyInte_N
10 GASC
9 TEQ_SCAN
9 BOUT++interface
9 IPSworkflow
9 CURRAY
8 TRANSP-TIME_SLICES
7 pbsMonitor
7 FBM
7 TIMCON
7 20160621
7 CHEASE_ITM
6 TORBEAM
6 ICE
6 FNSFmodeling
6 ELM_processing
5 optmyinte
5 BOUT++core
4 TScalib
4 BRAINFUSE
4 GRIDGEN
4 H-mode_studies
4 TORAY_SHENMA
4 EAST_EXP_Predict
4 jplots
4 ITMactor
3 OMFITstats
3 BALOO
3 auto_profile_fit
3 IPScore
3 TIME_SLICES
3 EAST_EXP_Predict_2
3 dirtyCER
3 BOXN0
3 GENRAY_SCAN
3 ESC
3 NEO_scan
2 ThomsonScattering
2 TGLF_NN
2 SCRUNCH2
2 ICE_Analysis
2 GADB
2 LUKASUVPOKUS

1 DIII-D_FIGURE
1 OPTI_SQP
1 quickCER
1 _Heat_Flux_Analysis
1 IPSmonitor
1 OPTI
1 test_efit
1 ELMDW
1 ASIPP_IM
1 Heat_Flux_Analysis
1 neo_gacode
1 Hutchinson_Thermal_Front_Model
1 GCNMP
1 ALCON-old
1 CQL3D

Module Imports by Username

=====

Name: abramst

7 kineticEFIT
3 EFIT
2 OMFITprofiles
2 GAprfiles
1 kineticEFITmulti

=====

Name: adiallo

15 kineticEFITtime
12 OMFITprofiles
1 Osborne_profiles
1 fastTS

=====

Name: adwiteey

10 EFIT
8 PROFILES_GEN_GACODE
2 EFITtime
1 CHEASE_ITM
1 profiles
1 GAprfiles

=====

Name: afil

9 kineticEFITtime

1 OMFITprofiles

1 EFIT

=====

Name: amaan

1 EFIT

=====

Name: ashourvana

61 OMFITprofiles

10 kineticEFITmulti

7 IOL

6 TGLF_GACODE

6 kineticEFIT

5 TRANSP

4 SCOPE

4 EFIT

1 STRAHL

1 TGLF_scan

1 FIDASIM

1 GAprfiles

=====

Name: austinm

10 kineticEFIT

3 ONETWO

2 TRANSP

2 kineticEFITtime

1 TRANSP-TIME_SLICES

=====

Name: baradakk

29 kineticEFIT

28 GKS

18 kineticEFITmulti

5 TGLF_scan

3 TIMINGS

3 TGLF_GACODE

2 ONETWO

2 profiles
2 TRANSP
1 EPED
1 ZIPFITprofiles
1 EFIT
1 OMFITprofiles
1 ELITE
1 Osborne_profiles
1 SCOPE
1 VARYPED
1 GENRAY

=====

Name: barrj

11 EFIT
10 JLB_TEST
2 EFDB
1 EFITtime
1 SCOPE
1 GPEC
1 DISRUPTIONS

=====

Name: bartonjo

12 Langmuir_Probes
3 Boundary_Toolbox

=====

Name: beidlern

4 ONETWO
4 Osborne_profiles
2 EFIT

=====

Name: bellie

1 PROFILES_GEN_GACODE

=====

Name: bgriers

39 PT_SOLVER
22 TRANSP
15 TRXPL
5 TGYRO_GACODE

3 TGLF_scan
2 kineticEFITtime
1 PROFILES_GEN_GACODE
1 SCOPE

=====

Name: bgrierson

134 TRANSP
133 OMFITprofiles
44 SCOPE
17 kineticEFITtime
15 STRAHL
13 TUTORIAL
11 EFIT
9 MainIonData
9 EFITtime
8 kineticEFITmulti
7 TRXPL
6 kineticEFIT
6 TGYRO_GACODE
3 TIMINGS
3 TIME_SLICES
3 Osborne_profiles
3 TRANSP-TIME_SLICES
2 PT_SOLVER
2 EPED
2 IOL
1 FIDASIM
1 BIRTH
1 VARYPED
1 TGLF_scan

=====

Name: binchen

17 BOUT++manager
12 BOUT++

=====

Name: blyons

44 M3DC1
1 OMFITprofiles
1 kineticEFITtime

=====

Name: bortolon

14 OMFITprofiles

3 TRANSP

2 kineticEFITtime

1 VARYPED

=====

Name: briesemeister

3 kineticEFIT

1 EFIT

=====

Name: brookmanmw

101 OMFITprofiles

19 fluxFIT

9 TORAY

8 kineticEFITtime

8 ONETWO

3 profiles

3 TRANSP

3 EFIT

2 EFITtime

1 kineticEFIT

1 IOL

1 Boundary_Toolbox

=====

Name: bykovi

23 OMFITprofiles

17 Osborne_profiles

16 kineticEFITtime

12 ELMremoval

10 EFIT

9 ELMprofiles

8 EFITtime

4 Boundary_Toolbox

3 TRIP3DGPU

3 GAprfiles

2 ONETWO

2 density_shelves

2 TRANSP

2 ONETWOtime

1 UEDGE
1 TRANSP-TIME_SLICES
1 SCOPE
1 H-mode_studies
1 PROFILES_GEN_GACODE
1 M3DC1
1 BIRTH
1 TIMCON

=====

Name: camicollins

25 kineticEFITtime
9 TRANSP
3 OMFITprofiles
3 EFITtime
2 FIDASIM
1 MainIonData
1 TRXPL

=====

Name: canalg

1 VARYPED
1 ELITE

=====

Name: candy

54 TGYRO_GACODE

=====

Name: carpanesef

27 MODIFY_SHAPE
2 FASTRAN
2 CALTRANS
1 kineticEFIT
1 IPSworkflow
1 TRANSP
1 EFIT

=====

Name: casalil

6 SOLPS
4 OMFITprofiles
2 EFIT

1 Osborne_profiles
1 TRANSP
1 GAprfiles

=====

Name: chenj

20 OMFITprofiles
13 TGLF_scan
11 kineticEFITtime
10 EFIT
9 kineticEFITmulti
7 SCOPE
5 profiles
5 kineticEFIT
4 TGLF_GACODE
3 EFITtime
3 GKS
3 PROFILES_GEN_GACODE
3 GENRAY
3 GAprfiles
1 EPED
1 TRANSP
1 TORAY
1 TIMINGS

=====

Name: chenji

5 kineticEFITtime
4 GATO
3 kineticEFIT
2 SOLPS
2 EPED
1 TUTORIAL
1 CQL3D
1 TORAY
1 GENRAY
1 NUBEAM
1 TRANSP
1 ELITE
1 EFIT
1 PEST3
1 IPSworkflow

=====

Name: chenm

67 kineticEFITtime

7 kineticEFITmulti

6 kineticEFIT

5 EFIT

=====

Name: chenxi

76 kineticEFIT

30 VARYPED

26 GKS

25 kineticEFITtime

17 TGLF_scan

16 ONETWO

13 ELITE

12 OMFITprofiles

7 kineticEFITmulti

5 EPED

4 TRANSP

2 M3DC1

1 GENRAY

1 TORBEAM

1 TGLF_GACODE

1 PROFILES_GEN_GACODE

1 Osborne_profiles

1 profiles

1 GAprfiles

=====

Name: choiwilkie

5 OMFITprofiles

5 kineticEFIT

1 profiles

=====

Name: chrystal

24 TGYRO_GACODE

7 kineticEFIT

6 TGLF_scan

6 TRANSP

5 TRXPL

1 SCOPE

1 kineticEFITmulti
1 profiles

=====

Name: churchillr

2 ZIPFITprofiles
2 GAprfiles
1 FIDASIM
1 Osborne_profiles
1 kineticEFIT
1 IPSworkflow
1 NUBEAM
1 profiles
1 DISRUPTIONS
1 EFIT

=====

Name: clau

7 EFIT
6 TRANSP
5 kineticEFITmulti
4 GENRAY
3 SCOPE
1 Osborne_profiles
1 FASTRAN

=====

Name: collinscs

19 kineticEFITtime
18 kineticEFITmulti
17 kineticEFIT
10 TRANSP
2 OMFITprofiles
2 FIDASIM
2 EFIT
1 EFITtime
1 TRXPL
1 GAprfiles

=====

Name: coveleb

5 SOLPS

=====

Name: cuil

176 kineticEFITtime
121 TRANSP
104 kineticEFIT
76 TGYRO_GACODE
63 TGLF_scan
30 TRXPL
20 TGLF_GACODE
19 GPEC
8 SCOPE
8 OMFITprofiles
7 kineticEFITmulti
5 EFIT
3 NEO_scan
2 MagneticFlutter
2 Osborne_profiles
2 GAprofilestime
2 ELMprofiles
1 TRANSP-TIME_SLICES
1 VARYPED
1 ELITE
1 neo_gacode
1 EFITtime

=====

Name: david

10 OEDGE
8 OMFITprofiles
2 SOLPS
2 UEDGE
2 Boundary_Toolbox
1 TUTORIAL
1 profiles
1 EFIT

=====

Name: davisem

25 OMFITprofiles
1 profiles
1 SCOPE

=====

Name: dboyle

1 EFIT
1 SCOPE

=====
Name: degrassi

7 TGLF_GACODE
1 EFIT
1 kineticEFIT

=====
Name: dfkong

1 TGYRO_GACODE

=====
Name: diallo

1 fastTS

=====
Name: dimitsa

1 kineticEFIT

=====
Name: dimits1

6 kineticEFIT

=====
Name: dingrui

1 OEDGE

=====
Name: dingsiye

1 kineticEFITtime

=====
Name: dorr

52 EFIT
49 COGENT
1 GRIDGEN

=====
Name: drsmith

1 BOUT++

1 VARYPED
1 BOUT++manager
=====

Name: duttas

1 TRIP3DGPU
1 ELITE
1 SURFMN
1 EPED
=====

Name: duxiaodi

5 OMFITprofiles
5 NUBEAM
3 FBM
1 FIDASIM_V1.0
1 profiles
1 EFIT
1 GAprfiles
=====

Name: eggertw

40 auto_kEFIT
35 FIAT
23 TRANSP
3 auto_profile_fit
3 OMFITprofiles
3 EFITtime
3 ONETWO
3 ONETWOtime
1 GPEC
1 dirtyCER
1 fastTS
=====

Name: eidietis

2 SCOPE
1 EFIT
=====

Name: elder

1 OMFITprofiles
1 Boundary_Toolbox

1 OEDGE

=====

Name: Eldon

6 PCS

=====

Name: eldond

198 SOLPS

72 OMFITprofiles

53 auto_kEFIT

39 Boundary_Toolbox

37 kineticEFITtime

24 fastTS

19 DivSol

17 EFITtime

15 density_shelves

14 EFIT

13 kineticEFIT

12 BPMIC_COMMAND_CENTER

9 ONETWOtime

8 BES

6 ELM_processing

5 profiles

5 TRANSP

5 2POINTSOL

4 TIMCON

4 PCS

4 FIAT

3 Osborne_profiles

2 ELMremoval

2 EPED

2 Langmuir_Probes

2 kineticEFITmulti

2 SCOPE

2 H-mode_studies

2 dirtyCER

1 ELMprofiles

1 ONETWO

1 FASTRAN

1 CALTRANS

1 DISRUPTIONS

1 PROFILES_GEN_GACODE

1 quickCER
1 DIII-D_FIGURE
1 CHEASE_ITM
1 BIRTH
1 GAprfiles

=====

Name: ernst

1 TUTORIAL
1 ZIPFITprofiles

=====

Name: evans

10 TRIP3DGPU
4 OMFITprofiles
3 profiles
3 EPED
2 SURFMN
1 ELITE
1 TRANSP-TIME_SLICES
1 EFIT

=====

Name: fernandezp

31 kineticEFITtime
20 TRANSP
20 TGLF_scan
16 kineticEFIT
10 TGLF_GACODE
7 TGYRO_GACODE
5 OMFITprofiles
5 kineticEFITmulti
4 PT_SOLVER
2 TRXPL
2 GAprfiles
1 SCOPE
1 profiles
1 EFIT

=====

Name: fila

31 kineticEFITtime
6 EFIT

4 VARYPED
2 OMFITprofiles
2 CHEASE_ITM
2 TRANSP
1 TORAY
1 GPEC
1 M3DC1
1 ELMprofiles
1 PEST3
1 CALTRANS

=====

Name: fscotti

2 kineticEFITtime

=====

Name: garofalo

1 kineticEFIT

=====

Name: gatesr

5 DISRUPTIONS

=====

Name: glassf

4 TScalib
2 ThomsonScattering
2 EFIT
1 FIDASIM
1 TRANSP
1 GAprfiles

=====

Name: gongx

2 kineticEFIT

=====

Name: gpaganin

2 EFIT
1 kineticEFITtime

=====

Name: granetz

1 DISRUPTIONS

=====

Name: graytk

1 kineticEFITtime

=====

Name: greendl1

63 SOLPS

1 TGLF_scan

1 BOUT++

=====

Name: grierson

144 OMFITprofiles

122 TRANSP

91 kineticEFITmulti

83 STRAHL

81 TGYRO_GACODE

71 kineticEFIT

70 kineticEFITtime

68 TGLF_scan

43 SCOPE

43 TRXPL

21 FIDASIM

18 EFIT

16 VARYPED

14 EFITtime

10 PROFILES_GEN_GACODE

9 PT_SOLVER

8 profiles

7 IOL

7 ELITE

4 GAprfiles

4 EPED

4 GAprfilestime

4 TGLF_GACODE

2 SCRUNCH2

2 2POINTSOL

2 Osborne_profiles

2 BIRTH

2 FBM

1 FIDASIM_V1.0

1 ELMremoval

1 XGCO

=====

Name: groebner

1 kineticEFIT

=====

Name: guowf

45 kineticEFIT

14 TGYRO_GACODE

12 EFIT

5 ALCON

3 ONETWO

2 TGLF_scan

2 ELITE

2 VARYPED

2 GATO

2 TGLF_GACODE

2 EPED

1 BOUT++

1 PROFILES_GEN_GACODE

1 ELMremoval

1 GAprfiles

=====

Name: guttenfe

3 kineticEFITtime

=====

Name: halpernf

3 SOLPS

2 EFIT

1 BOUT++

=====

Name: haskeysr

46 FIDASIM

44 kineticEFIT

33 OMFITprofiles

27 FIDASIM_V1.0

25 kineticEFITtime

25 ELMremoval

15 MainIonData
14 kineticEFITmulti
8 ADAS
8 SCOPE
5 PROFILES_GEN_GACODE
4 ELITE
4 IOL
3 VARYPED
3 EFIT
2 STRAHL
2 TRANSP
1 EFITtime
1 ZIPFITprofiles
1 ELMprofiles
1 TGLF_scan
1 ONETWO
1 TGYRO_GACODE
1 TUTORIAL
1 ONETWOtime
1 EPED

=====

Name: hesheng

12 TGLF_GACODE

=====

Name: hinsone

36 kineticEFIT
16 EFIT
7 OMFITprofiles
4 profiles
2 PROFILES_GEN_GACODE
1 kineticEFITtime
1 Boundary_Toolbox

=====

Name: holcomb

29 kineticEFIT
9 EFIT
3 kineticEFITtime
2 ONETWO
2 MODIFY_SHAPE
1 OMFITprofiles

1 profiles
1 kineticEFITmulti
1 FASTRAN

=====

Name: holland

13 kineticEFIT
10 kineticEFITtime
8 TGYRO_GACODE
6 OMFITprofiles
4 TGLF_scan
3 SCOPE
3 EPED
3 TRXPL
2 NIMROD
2 TGLF_GACODE
2 kineticEFITmulti
2 profiles
2 EFIT
1 PROFILES_GEN_GACODE
1 BOUT++interface
1 FASTRAN

=====

Name: howardnt

13 OMFITprofiles
11 STRAHL
5 EFIT
3 TRANSP
1 PT_SOLVER
1 kineticEFIT
1 TGYRO_GACODE
1 GAprofiles

=====

Name: huangj

14 kineticEFIT
3 ALCON
2 GATO

=====

Name: huxing

3 kineticEFITmulti

2 EFIT
1 kineticEFIT
=====

Name: izacard

3 BOUT++
2 UEDGE
1 BOUT++manager
=====

Name: izacardo

3 ELITE
3 kineticEFITtime
2 BOUT++
2 VARYPED
1 kineticEFIT
1 UEDGE
1 EFIT
=====

Name: izzo

1 NIMROD
=====

Name: izzov

41 NIMROD
23 reOrbit
4 EFIT
2 GAprfiles
1 BOUT++
1 TORAY
1 OMFITprofiles
1 GENRAY
1 GATO
1 IPSworkflow
=====

Name: jberkery

1 kineticEFITtime
=====

Name: jgchen

8 BOUT++manager

6 BOUT++

1 SOLPS

=====

Name: jlchen

9 ONETWO

6 pbsMonitor

6 EPED

5 kineticEFIT

3 TGYRO_GACODE

2 TGLF_scan

2 GATO

2 HeFei_server

1 kineticEFITtime

1 ASIPP_IM

1 kineticEFITmulti

1 TUTORIAL

1 EFIT

1 TORAY_SCAN

1 IPSworkflow

=====

Name: jorge

6 TGLF_scan

5 TGLF_GACODE

3 ALCON

2 PROFILES_GEN_GACODE

2 TGYRO_GACODE

2 TRANSP

1 EFITtime

1 kineticEFITtime

1 ESC

1 EFIT

1 TRXPL

=====

Name: josephi

6 kineticEFIT

2 BOUT++

1 kineticEFITtime

1 SCOPE

1 M3DC1

1 2POINTSOL

1 UEDGE
1 EFIT
=====

Name: jsachdev

6 TRANSP
1 EFIT
=====

Name: jurban

2 EPED
1 OMFITprofiles
1 EFITtime
=====

Name: kathreenthome

60 OMFITprofiles
39 kineticEFITtime
22 SCOPE
9 TRANSP
1 FIDASIM_V1.0
1 EFITtime
=====

Name: kaye

10 kineticEFITtime
5 TGLF_scan
5 TGYRO_GACODE
4 TRANSP
3 TGLF_GACODE
1 EFITtime
1 PT_SOLVER
=====

Name: kimkyungjin

18 NIMROD
17 PEST3
6 GATO
1 OMFITprofiles
1 CURRAY
1 kineticEFIT
1 GENRAY
1 CHEASE_ITM

1 profiles
1 EFIT
1 GAprfiles

=====

Name: kinsey

3 FREYA
3 kineticEFIT
2 TGLF_scan
1 EFIT
1 TGYRO_GACODE

=====

Name: knolkerm

125 ELITE
112 VARYPED
80 kineticEFITtime
55 kineticEFITmulti
35 OMFITprofiles
22 kineticEFIT
14 EPED
11 ELMremoval
11 Boundary_Toolbox
8 EFIT
4 M3DC1
3 2POINTSOL
3 ELMprofiles
3 Osborne_profiles
2 MainIonData
2 GATO
2 SOLPS
2 PEST3
2 ZIPFITprofiles
1 _Heat_Flux_Analysis
1 NIMROD
1 TRIP3DGPU
1 GAprfiles
1 H-mode_studies
1 PROFILES_GEN_GACODE
1 UEDGE
1 MagneticFlutter
1 TGLF_GACODE
1 ELMDW

1 SCOPE
1 STRAHL
1 profiles
1 fastTS

=====

Name: kongd

93 EPED
10 ELITE
6 kineticEFIT
3 EFIT
2 NUBEAM
2 VARYPED
2 ONETWO
1 profiles
1 GKS
1 TRANSP
1 TGLF_scan
1 ELMremoval
1 MODIFY_SHAPE
1 GATO
1 BOUT++interface
1 SOLPS
1 TORBEAM

=====

Name: kostukm

3 EFIT
2 kineticEFITtime
2 SCOPE
2 BIRTH
2 CHEASE_ITM
1 CURRAY
1 TRANSP
1 DISRUPTIONS
1 BOXN0

=====

Name: kramer

2 kineticEFITmulti

=====

Name: kripner

2 LUKASUVPOKUS

1 2POINTSOL

1 profiles

1 EFIT

=====

Name: lanctot

48 EFDB

31 kineticEFITtime

11 EPED

3 kineticEFITmulti

2 OMFITprofiles

2 TRANSP

1 EFITtime

1 TGLF_GACODE

1 EFIT

=====

Name: lao

3 profiles

2 EFIT

1 SOLPS

=====

Name: lauc

6 kineticEFITmulti

2 kineticEFIT

=====

Name: leejanet

49 TRIP3DGPU

=====

Name: lfluo

72 20160525

40 MyInte

7 20160621

7 EFIT

5 MyInte_imp

4 PROFILES_GEN_GACODE

3 TGLF_GACODE

3 TGYRO_GACODE

1 ONETWO

1 ESC
1 CURRAY
1 EPED
1 NUBEAM

=====

Name: lig

14 EPED
9 ELITE
9 kineticEFIT
9 VARYPED
6 EFIT
4 ELMprofiles
2 OMFITprofiles
2 Osborne_profiles
2 GATO
2 ONETWO
1 kineticEFITtime
1 PEST3
1 NUBEAM
1 ELMremoval
1 SCOPE

=====

Name: lijx

20 EFIT_lzy
5 ONETWO
4 TGYRO_GACODE
2 EPED
1 EFIT

=====

Name: lindan

101 OMFITprofiles
42 FIDA
18 FIDASIM_V1.0
12 kineticEFITtime
10 FIDASIM
7 EFIT
6 kineticEFIT
3 NUBEAM
3 TRANSP
1 SCOPE

1 Osborne_profiles
1 ZIPFITprofiles
1 GAprfiles

=====

Name: liud

10 kineticEFITtime
2 FIAT
1 FIDASIM_V1.0
1 FIDASIM

=====

Name: lmorton

4 kineticEFITtime
3 OMFITprofiles
3 kineticEFIT
2 SCOPE
2 ZIPFITprofiles
1 TUTORIAL
1 PEST3
1 EFIT

=====

Name: logannc

14 GPEC
9 OMFITprofiles
8 SCOPE
6 HARVEST
6 EFIT
5 kineticEFITtime
4 GAprfilestime
3 EFITtime
3 kineticEFITmulti
2 kineticEFIT
2 TRANSP
1 SURFMN
1 ELMremoval
1 GAprfiles

=====

Name: luce

47 TEQ
4 TRANSP

3 TEQ_SCAN

1 GATO

=====

Name: ludat

6 OMFITprofiles

6 TGYRO_GACODE

5 TGLF_GACODE

3 BRAINFUSE2

3 kineticEFITmulti

1 PROFILES_GEN_GACODE

1 SCOPE

1 kineticEFIT

=====

Name: luoc

24 kineticEFITtime

8 OMFITprofiles

7 EFIT

3 profiles

2 TRANSP

2 ELMremoval

2 GAprfiles

1 EFITtime

1 SOLPS

1 ELMprofiles

=====

Name: lupinl

9 DISRUPTIONS

7 EFIT

=====

Name: lxj

2 SOLPS

=====

Name: lyonsbc

2 OMFITprofiles

1 kineticEFITtime

=====

Name: makowski

2 EFIT

=====

Name: marinoni

50 TRANSP

47 kineticEFIT

33 TGYRO_GACODE

25 kineticEFITtime

20 GKS

10 TGLF_scan

6 kineticEFITmulti

5 TGLF_GACODE

4 ONETWO

3 PROFILES_GEN_GACODE

2 OMFITprofiles

1 ELITE

1 2POINTSOL

1 profiles

1 GENRAY

=====

Name: matthijs

2 auto_kEFIT

=====

Name: maxwallace

1 kineticEFITtime

=====

Name: mboyer

1 TRANSP

=====

Name: mcclenaghanj

95 kineticEFIT

66 ALCON

54 TGYRO_GACODE

13 GATO

13 TGLF_GACODE

11 OMFITprofiles

10 SCOPE

10 kineticEFITtime

8 EPED

7 EFIT
6 FNSFmodeling
6 GASC
5 TGLF_scan
4 ONETWO
2 GAprfiles
2 M3DC1
2 EFITtime
1 CALTRANS
1 ALCON-old
1 kineticEFITmulti
1 PROFILES_GEN_GACODE
1 TRANSP

=====

Name: meneghin

1 BOUT++interface

=====

Name: meneghini

168 EFIT
135 EPED
129 kineticEFITtime
122 OMFITprofiles
90 kineticEFIT
49 TRANSP
45 2POINTSOL
42 EFITtime
40 SCOPE
38 OMFIT_GDT
37 TGYRO_GACODE
26 kineticEFITmulti
25 SOLPS
23 BOUT++
23 ALCON
23 HARVEST
19 BRAINFUSE2
17 ELITE
15 ONETWO
14 VARYPED
9 PROFILES_GEN_GACODE
8 CALTRANS
8 FREYA

8 ELMremoval
7 GPEC
7 TGLF_scan
7 M3DC1
7 TORAY
6 DISRUPTIONS
6 TGLF_GACODE
5 GATO
5 BOUT++core
5 profiles
4 Boundary_Toolbox
4 PEST3
4 TRXPL
4 BRAINFUSE
4 MODIFY_SHAPE
4 BPMIC_COMMAND_CENTER
4 TRIP3DGPU
3 NIMROD
3 GAprfiles
3 BALOO
3 UEDGE
3 BOUT++interface
3 CURRAY
3 BIRTH
2 TIMINGS
2 GADB
2 TORBEAM
2 GENRAY
2 COGENT
2 PCS
2 reOrbit
2 IPSworkflow
2 FASTRAN
2 TEQ
2 NUBEAM
2 ELMprofiles
2 ZIPFITprofiles
2 OMFITstats
1 Osborne_profiles
1 IPScore
1 STRAHL
1 BOXN0
1 GKS

1 ONETWOtime
1 aaaa
1 IPSmonitor
1 MagneticFlutter
1 aaa
1 raffi_test

=====

Name: mordijck

16 kineticEFIT
7 OMFITprofiles
7 GKS
1 profiles

=====

Name: morgak

3 NIMROD

=====

Name: Morton

3 EFIT
2 BES
1 OMFITprofiles
1 SCOPE

=====

Name: mortonl

5 OMFITprofiles
3 profiles
1 M3DC1
1 SCOPE
1 GAprofiles

=====

Name: mosera

2 OMFITprofiles

=====

Name: moyer

2 OMFITprofiles
1 TRIP3DGPU
1 profiles

=====

Name: mparsons

1 SCOPE

=====

Name: murakami

18 kineticEFITtime

13 kineticEFITmulti

2 OMFITprofiles

2 GAprfiles

1 kineticEFIT

1 TRANSP

=====

Name: muscatel

1 OMFITprofiles

=====

Name: nanshi

371 MyInte_imp

267 MyInte

224 ForW

21 kineticEFIT

11 MyInte_W

10 MyInte_N

7 ONETWO

5 EFIT_lzy

5 EFIT

4 TGYRO_GACODE

1 TGLF_scan

1 TGLF_GACODE

1 EPED

1 GAprfiles

=====

Name: nave

37 kineticEFIT

5 PROFILES_GEN_GACODE

1 SCOPE

1 kineticEFITmulti

=====

Name: nazikian

52 kineticEFITtime
26 kineticEFITmulti
17 PROFILES_GEN_GACODE
12 kineticEFIT
5 TRANSP
3 OMFITprofiles
3 ONETWO
1 SCOPE
1 profiles
1 CALTRANS

=====

Name: nferraro

1 M3DC1
1 kineticEFIT

=====

Name: nlogan

62 OMFITprofiles
22 TRANSP
10 kineticEFITtime
8 kineticEFIT
8 GPEC
5 profiles
5 kineticEFITmulti
5 SCOPE
3 EFIT
2 HARVEST
2 TGLF_scan
1 EFITtime
1 CALTRANS
1 CURRAY
1 FIDASIM
1 OMFITstats
1 EFDB
1 GAprfiles

=====

Name: nthoward

1 EFIT
1 OMFITprofiles
1 TRANSP
1 kineticEFITtime

1 kineticEFIT
=====

Name: oizacard

5 BOUT++
5 UEDGE
2 kineticEFITtime
2 kineticEFIT
1 Osborne_profiles
1 OMFITprofiles
1 IOL
1 BOUT++manager
1 kineticEFITmulti
=====

Name: okabay

44 kineticEFITtime
7 kineticEFIT
2 OMFITprofiles
2 TRANSP
1 EFITtime
1 ZIPFITprofiles
1 EFIT
=====

Name: omeneghi

1 TRANSP
=====

Name: orlov

15 OMFITprofiles
13 VARYPED
12 TRANSP
11 ELITE
8 TRIP3DGPU
8 SURFMN
7 TGLF_scan
7 kineticEFIT
6 NIMROD
6 EPED
5 ONETWO
4 PROFILES_GEN_GACODE
3 TGYRO_GACODE

3 TRXPL
1 SOLPS
1 kineticEFITmulti
1 EFIT

=====

Name: orso

4 kineticEFITtime
1 OMFITprofiles
1 TRANSP
1 kineticEFIT

=====

Name: pablorf

8 TRANSP
6 kineticEFITtime
4 TGLF_scan
2 TGLF_GACODE
1 PT_SOLVER
1 OMFITprofiles
1 TGYRO_GACODE

=====

Name: pacedc

9 kineticEFITtime
2 ALCON
1 OMFITprofiles
1 BIRTH
1 kineticEFIT
1 NUBEAM
1 TRANSP
1 EFIT

=====

Name: pajaresa

2 TRANSP

=====

Name: panck

153 TGYRO_GACODE
50 EFIT
32 GAprfiles
25 kineticEFIT

20 SCOPE
16 TGLF_scan
16 ONETWO
13 ZIPFITprofiles
10 GATO
2 IPScore
1 PROFILES_GEN_GACODE
1 IOL
1 reOrbit
1 TRANSP
1 kineticEFITmulti

=====

Name: parkjm

2 GATO

=====

Name: paz-soldan

16 kineticEFITtime

6 EFIT

3 kineticEFIT

2 OMFITprofiles

2 EFITtime

2 profiles

=====

Name: petty

7 kineticEFITmulti

=====

Name: polifm

10 EPED

=====

Name: rchurchi

1 BOUT++

1 NUBEAM

=====

Name: reac

10 SCOPE

2 DISRUPTIONS

1 ZIPFITprofiles

1 PCS

=====

Name: renq

57 EFIT

54 kineticEFIT

30 GATO

25 SCOPE

19 GAprfiles

12 ONETWO

6 kineticEFITtime

3 TGYRO_GACODE

2 kineticEFITmulti

2 ALCON

1 density_shelves

1 TRANSP

1 ZIPFITprofiles

=====

Name: renyang

4 SCOPE

2 kineticEFIT

1 OMFITprofiles

1 EFIT

1 GAprfiles

=====

Name: riviereb

5 TRIP3DGPU

=====

Name: roelofsm

50 auto_kEFIT

1 kineticEFIT

=====

Name: samuellic

7 OMFITprofiles

3 SCOPE

2 EFIT

2 Boundary_Toolbox

2 GAprfiles

=====

Name: sangcf

3 SOLPS
1 Boundary_Toolbox
1 UEDGE
1 OEDGE

=====

Name: schaeferc

30 EFDB
17 kineticEFITtime
8 EFITtime
1 EFIT
1 OMFITprofiles

=====

Name: schmitzl

1 OMFITprofiles
1 ONETWO
1 TRANSP

=====

Name: shafer

14 OMFITprofiles
13 kineticEFIT
2 STRAHL
1 profiles
1 GATO

=====

Name: shaskey

218 OMFITprofiles
59 MainIonData
50 FIDASIM
32 XGC0
30 kineticEFITtime
29 FIDASIM_V1.0
23 kineticEFIT
12 ADAS
4 SCOPE
3 profiles
3 TGLF_scan
3 IOL

3 VARYPED
2 TRANSP
2 ELITE
2 ONETWOtime
1 kineticEFITmulti
1 STRAHL
1 ELMremoval
1 EFIT
1 ELMprofiles

=====

Name: shin

3 ForW
2 TGYRO_GACODE
1 MyInte_imp
1 EFIT
1 ONETWO

=====

Name: shirakid

1 OMFITprofiles

=====

Name: shisy

176 MyInte_imp
90 ForW
30 MyInte
6 TGYRO_GACODE
4 TGLF_GACODE
2 kineticEFIT
2 EFIT
1 BOUT++
1 ONETWO
1 EFIT_lzy
1 BOUT++interface
1 PROFILES_GEN_GACODE
1 TRANSP

=====

Name: smithsp

69 OMFITprofiles
51 TEQ
37 EFIT

23 TRANSP
21 ONETWO
17 TGYRO_GACODE
16 TGLF_scan
15 kineticEFIT
14 ONETWOtime
10 Stiffness
10 Osborne_profiles
10 MagneticFlutter
10 TGLF_GACODE
10 kineticEFITtime
9 GATO
9 EFITtime
8 profiles
7 GPEC
6 SCOPE
6 PROFILES_GEN_GACODE
6 TEQ_SCAN
5 EPED
5 BPMIC_COMMAND_CENTER
4 MODIFY_SHAPE
4 OMFIT_GDT
4 TRXPL
4 GProfiles
4 kineticEFITmulti
3 SURFMN
3 IOL
3 VARYPED
3 OEDGE
3 GENRAY
2 ZIPFITprofiles
2 ELITE
2 NIMROD
2 ADAS
2 HARVEST
2 TRIP3DGPU
2 fastTS
2 TGLF_NN
1 BOUT++
1 2POINTSOL
1 GCNMP
1 ALCON
1 ESC

1 TORBEAM
1 CALTRANS
1 reOrbit
1 M3DC1
1 GAprofilestime
1 NUBEAM
1 FASTRAN
1 ELMprofiles
1 UEDGE
1 SOLPS
1 Heat_Flux_Analysis
1 TUTORIAL
1 PEST3
1 TORAY
1 TIMINGS
1 FIDASIM
1 Hutchinson_Thermal_Front_Model
1 CURRAY
1 raffi_test

=====

Name: snyder

1 EFIT
1 kineticEFIT
1 EPED

=====

Name: solomon

20 VARYPED
11 ELITE
10 kineticEFIT
4 EPED
3 TRANSP
2 kineticEFITmulti
2 UEDGE
1 OMFITprofiles
1 SOLPS
1 profiles

=====

Name: soukhan

11 VARYPED
11 kineticEFIT

8 ELITE
3 GProfiles
2 OMFITprofiles
1 STRAHL
1 Osborne_profiles
1 profiles
1 EFIT
1 Boundary_Toolbox

=====

Name: ssmith

4 OMFITprofiles
4 kineticEFITtime
2 kineticEFIT
1 EFITtime
1 TRANSP
1 TRANSP-TIME_SLICES
1 EFIT

=====

Name: staebler

33 TGLF_GACODE
4 SCOPE
2 TGYRO_GACODE
2 GKS
1 kineticEFITtime
1 GProfilestime
1 GProfiles

=====

Name: sungc

175 TGLF_scan
114 kineticEFIT
78 GKS
19 ONETWO
18 kineticEFITmulti
8 OMFITprofiles
8 VARYPED
4 TGLF_GACODE
3 ELITE
1 profiles
1 TRANSP
1 IPSworkflow

=====

Name: sweeneyrm

19 OMFITprofiles

2 ONETWO

1 EFITtime

1 kineticEFITtime

1 SCOPE

1 kineticEFIT

1 EFIT

=====

Name: tang31

4 VARYPED

2 EFIT

1 BOUT++

=====

Name: taylornz

9 EFIT

7 EFITtime

7 ONETWO

6 OMFITprofiles

6 kineticEFIT

4 kineticEFITtime

2 profiles

2 ONETWOtime

1 SCOPE

1 GAprofiles

=====

Name: thomas

1 STRAHL

1 kineticEFITtime

=====

Name: thomek

139 TRANSP

136 TGYRO_GACODE

120 OMFITprofiles

105 kineticEFITtime

69 TGLF_scan

49 TRXPL

34 SCOPE
9 GProfiles
8 EFITtime
6 ICE
5 EFIT
5 TGLF_GACODE
5 kineticEFIT
5 kineticEFITmulti
4 BIRTH
2 ICE_Analysis
2 VARYPED
2 ONETWOtime
2 ELITE
2 ONETWO
2 FBM
1 SURFMN
1 ZIPFITprofiles
1 BOXN0
1 ELMremoval
1 PROFILES_GEN_GACODE
1 BES

=====

Name: tobiasb

8 kineticEFITmulti
3 TRANSP
2 EFIT
1 kineticEFITtime
1 kineticEFIT
1 GProfiles

=====

Name: trevisan

11 EFIT
3 TRIP3DGPU

=====

Name: Trevisan

25 TRIP3DGPU
8 EFIT
4 SCOPE
4 SURFMN
2 M3DC1

1 OMFIT_GDT
1 TUTORIAL
1 TGYRO_GACODE
1 OMFITprofiles

=====

Name: turcof

5 profiles
5 EFIT
1 OMFITprofiles

=====

Name: turnbull

10 TEQ
10 GATO
6 VARYPED
2 ELITE
1 M3DC1
1 EFIT
1 CALTRANS

=====

Name: twilks

1 OMFITprofiles
1 profiles

=====

Name: umansky

1 BOUT++

=====

Name: unterbee

9 OMFITprofiles
5 STRAHL
4 SCOPE
3 kineticEFITtime
2 Osborne_profiles
2 profiles
2 ONETWO
2 GAprfiles
1 TIMCON
1 TIMINGS
1 fastTS

1 ZIPFITprofiles
1 Boundary_Toolbox
1 EFIT

=====

Name: urban

4 OMFITprofiles
2 EPED

=====

Name: vailp

10 kineticEFITtime
1 Boundary_Toolbox
1 OMFITprofiles
1 GAprfiles

=====

Name: vianello

2 TRANSP
1 TUTORIAL

=====

Name: victorb

152 kineticEFITtime
68 TRANSP
57 STRAHL
48 kineticEFIT
48 EFIT
33 OMFITprofiles
32 kineticEFITmulti
22 EFITtime
17 TGYRO_GACODE
16 FIDASIM
5 ELITE
4 FIDASIM_V1.0
4 ONETWOtime
4 TGLF_scan
4 VARYPED
4 jplots
3 ONETWO
3 CALTRANS
3 SCOPE
2 GAprfiles

2 TUTORIAL

1 TRXPL

1 EPED

1 ITMactor

=====

Name: vlad

19 kineticEFITtime

16 OMFITprofiles

4 kineticEFIT

3 Osborne_profiles

2 ELMprofiles

2 profiles

2 TRANSP

1 VARYPED

1 2POINTSOL

1 UEDGE

=====

Name: wangh

105 TRANSP

5 ZIPFITprofiles

3 kineticEFITtime

3 kineticEFIT

1 OMFITprofiles

1 GATO

1 DISRUPTIONS

1 GAprfiles

=====

Name: wanghuiqian

42 TGYRO_GACODE

28 VARYPED

25 EPED

20 PROFILES_GEN_GACODE

19 ELITE

10 IOL

8 Osborne_profiles

7 ONETWO

5 EFIT

4 NIMROD

4 kineticEFIT

4 TGLF_GACODE

3 TGLF_scan
2 TRANSP
1 ELMremoval
1 OEDGE
1 BOUT++
1 profiles
1 ZIPFITprofiles
1 OMFITprofiles
1 GAprfiles
1 M3DC1
1 kineticEFITtime
1 FASTRAN
1 GATO

=====

Name: wangqi

65 kineticEFIT
20 GATO
16 EFIT
2 ITMactor
1 M3DC1
1 NUBEAM
1 MODIFY_SHAPE

=====

Name: wangxin

8 kineticEFIT
6 TGLF_scan
6 GKS
2 SCOPE
1 OMFITprofiles

=====

Name: wangy

2 ELITE
2 kineticEFIT

=====

Name: weisbergd

14 TRANSP
4 GASC
1 EFIT
1 TORBEAM

=====

Name: whitea

1 kineticEFIT

1 SCOPE

=====

Name: wilcoxr

17 kineticEFIT

4 EFIT

2 profiles

=====

Name: wilkstm

48 BOUT++

23 kineticEFITtime

22 IOL

16 EFIT

12 ELITE

12 Osborne_profiles

11 VARYPED

6 kineticEFIT

3 GRIDGEN

3 OMFITprofiles

3 SCOPE

2 BOUT++manager

2 BOUT++interface

2 TRANSP

1 profiles

1 TIMCON

1 TGLF_scan

=====

Name: wingen

1 kineticEFIT

=====

Name: wmq

39 TGYRO_GACODE

32 ONETWO

4 kineticEFIT

4 EFIT

1 kineticEFITtime

1 kineticEFITmulti
=====

Name: wuwen

22 TRIP3DGPU
1 NUBEAM
=====

Name: wwallace

7 kineticEFITtime
4 OMFITprofiles
2 Osborne_profiles
2 fastTS
1 EFITtime
1 TRANSP
1 IPSworkflow
=====

Name: wwehner

59 TRANSP
2 GENRAY
1 OMFITprofiles
1 OPTI_SQP
1 EFIT
1 OPTI
=====

Name: xiangjian

278 MyInte
66 EFIT_lzy
56 EAST_EXP
35 TORAY_SCAN
30 ForW
27 desireflux
27 TGLF_SCAN
23 Den_on_turb
16 ONETWO-JTEXT
11 ELITE-ZYR
9 Cql3d
5 EPED
5 optmyinte
4 kineticEFIT
4 EAST_EXP_Predict

4 TORAY_SHENMA
3 EFIT
3 EAST_EXP_Predict_2
3 TGLF_GACODE
2 TGLF_scan
2 TGYRO_GACODE
1 TORAY
1 MyInte_imp
1 GATO
1 BOUT++
1 CURRAY
1 kineticEFITmulti

=====

Name: xjzhang

1 GENRAY

=====

Name: xuelei

5 EFIT_lzy
3 ONETWO
2 TGYRO_GACODE
1 EFIT
1 test_efit

=====

Name: xugl

14 EFIT
10 TGYRO_GACODE
5 ONETWO
5 EFIT_lzy
4 EPED
2 OEDGE
2 UEDGE
1 BOUT++
1 kineticEFIT
1 NUBEAM
1 TRANSP
1 TORAY

=====

Name: xugs

149 kineticEFIT

7 EFIT
3 GProfiles
2 EPED
1 M3DC1

=====

Name: xzhu

5 HeFei_server
3 GENRAY_SCAN

=====

Name: yanz

27 kineticEFIT
4 Osborne_profiles
3 OMFITprofiles
2 ONETWO
2 profiles
2 PROFILES_GEN_GACODE
1 TGLF_GACODE
1 ITMactor
1 GProfiles

=====

Name: yelei

1 HeFei_server

=====

Name: yoshidam

75 kineticEFITtime
6 TRANSP
5 kineticEFITmulti
1 OMFIT_GDT

=====

Name: zeng

22 kineticEFIT
7 kineticEFITmulti
3 EFIT
2 ONETWO
1 OMFITprofiles
1 kineticEFITtime
1 Osborne_profiles
1 profiles

1 GENRAY
1 TGLF_GACODE
1 NUBEAM
1 TRANSP
1 GAprfiles

=====

Name: zhaixm

12 ONETWO
1 pbsMonitor

=====

Name: zhangp

2 SCOPE
2 OEDGE
1 TUTORIAL
1 Osborne_profiles
1 2POINTSOL
1 Boundary_Toolbox

=====

Name: zhaodeng

139 kineticEFIT
33 ONETWO
16 TGYRO_GACODE
6 EFIT
2 SCOPE
2 TORAY_SCAN
2 HeFei_server
1 MyInte_imp
1 TORAY
1 TGLF_GACODE
1 PROFILES_GEN_GACODE
1 2POINTSOL
1 ForW

=====

Name: zhaoyan

5 kineticEFIT

=====

Name: zhuyiren

23 EFIT_lzy

```

3 ELITE-ZYR
1 EFIT
1 ELITE
=====
Name: zhuzj
-----
17 MyInte
10 EAST_EXP
5 EFIT
4 ONETWO
3 TGYRO_GACODE
2 Cql3d
2 TGLF_GACODE
1 TGLF_SCAN
1 kineticEFIT
1 TRANSP
1 EPED
=====
Name: zyli
-----
3 EFIT
3 kineticEFIT
1 GATO
=====
Name: zyunpeng
-----
5 TGYRO_GACODE
4 EFIT_lzy
3 ONETWO
=====

```

Lines of Code per Contributor

```

79574 Orso Meneghini
28128 Brian Grierson
23958 David Eldon
16138 Shaun Haskey
13045 Sterling Smith
9637 Nikolas Logan
3274 James Buchanan

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2961 Valerie Izzo
2671 Brian Victor
2308 Olivier Izacard
1964 Francesco Carpanese
902 Brendan Lyons
811 Kathreen Thome
769 Joseph McClenaghan
711 David Green
588 buchanj
578 Christopher Holland
510 Zhixuan Wang
500 Dmitri Orlov
429 Wen Wu
274 Gregorio L. Trevisan
112 Pablo Rodriguez
107 Cristina Rea
84 Cami Collins
70 Michael Brookman
68 Jeff Candy
66 Theresa Wilks
45 Michael Fitzgerald
40 Qilong Ren
31 Carolyn Schaefer
26 Matthew Lanctot
20 Jakub Urban
18 +Lang Cui
17 Gustavo Canal
16 Zhao Deng
12 Lang Cui
12 Chengkang Pan
3 Matthijs Roelofs

Prompt

Tell us one instance where you find OMFIT particularly useful

- What things OMFIT made possible?
- What aspects of the framework did you find useful?
- What physics modules did you use?
- Have you contributed to the modules' source code, or provided your input?
- Would you go back to your old ways?
- Would you recommend it to other users?
- Add references to the database:

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