Publications and Presentations

- Annual Progress Reports
- Publications
  - 2019
  - 2018
- Presentations
  - 2019
  - 2018
  - 2017

You may also be interested in publications of our prior project on plasma surface interactions.

Annual Progress Reports

- 2018 Annual Report (Year 1), submitted 1 June 2018

Publications

- 2019
  - K. D. Hammond, Parallel Point Defect Identification in Molecular Dynamics Simulations Without Post-Processing: A Compute and Dump Style for LAMMPS, Computer Physics Communications (accepted).
  - J. Guterl, R.D. Smirnov and P. Snyder, Effects of surface processes on hydrogen outgassing from metal in desorption experiments, Nuclear Fusion 59 (9): 096042 (2019).

- 2018
  - Smith, C.W., Granzow, B., Diamond, G., Ibanez, D., Sahni, O., Jansen, K.E. and Shephard, M.S., Immemory integration of existing software components for parallel adaptive unstructured mesh workflows. Concurrency and Computation: Practice and Experience, 30(18) p.e4510, 2018
Presentations

2019


2018

- Robert D Kolasinski, Dwarpayan Dasgupta, Josh A Whaley, Aaron Engel, Frances I Allen, Dean Alan Buchenauer, Dimitrios Maroudas, Brian Wirth, Effects of helium plasmas on tungsten surfaces characterized by helium ion microscopy, ion channeling, and in-situ spectroscopic ellipsometry, American Physical Society Division of Plasma Physics Annual Meeting, Portland, Oregon, November 7, 2018.
- Andrei I Smolyakov, Sergei Krasheninnikov, SOL ballooning instabilities due to sheath boundary conditions and X-point geometry, American Physical Society Division of Plasma Physics Annual Meeting, Portland, Oregon, November 6, 2018.
• Davide Curreli, Jon T Drobny, Sophie Blondel, John Canik, David L Green, Tim Younkin, Brian Wirth, Coupled PIC-BCA simulations of the near-surface plasma at the ITER Outer Target, American Physical Society Division of Plasma Physics Annual Meeting, Portland, Oregon, November 6, 2018.

• John Canik, Ane Lasa, Sophie Blondel, Mark R Cianciosa, Davide Curreli, Jon T Drobny, Wael Elwasif, David L Green, Philip C Roth, Tim Younkin, Brian Wirth, Russ Doerner, Daisuke Nishijma, Matthew Baldwin, Status of integrated simulation of PFC surface evolution within the PSI-SciDAC project, American Physical Society Division of Plasma Physics Annual Meeting, Portland, Oregon, November 6, 2018.


• M.S. Shephard, E. Yoon, E.S. Seol, A. Truszkowska, G. Perumpilly, O. Sahni, W. Tobin, Distributed Mesh Infrastructure for Particle-in-Cell Simulations, APS DPP meeting, Portland, OR, Nov. 6, 2018.

• PSI SciDAC: Predicting the Performance and Impact of Dynamic PFC Surfaces- Brian Wirth, SciDAC PI Meeting 2018, Rockville, Maryland.


• Xolotl: a cluster dynamics code to predict gas bubble evolution in solids - Sophie Blondel, invited presentation at The 2018 Computer Simulation of Radiation Effects in Solids (COSIRES), Shanghai, China.


• Illustrative examples of analysis and modeling of impurity erosion and redeposition experiments in DIII-D with integrated PMI models, presented in part at the 23rd International Conference on Plasma Surface Interactions in Controlled Fusion Devices 2018, Princeton, New Jersey.

• Taming the Electrostatic Alfvén Wave and Ampere Cancellation Problems - Ilon Joseph, Transport Task Force Workshop (TTF) 2018, San Diego, California.

• Hydrogen retention in tungsten with self-induced trap formation - Roman Smirnov, poster presentation at the 23rd International Conference on Plasma Surface Interactions in Controlled Fusion Devices (PSI) 2018, Princeton, New Jersey.

• DFT/MD simulations of H-He interactions, trapping and binding below W surfaces - Brian Wirth, 25th Meeting of the ITPA Div-SOL, Chengdu China, 1 February 2018

• W surface evolution modeling towards the onset of fuzz- Brian Wirth, 25th Meeting of the ITPA Div-SOL, Chengdu China, 1 February 2018

• Basic physics of the first wall - Roman Smirnov, invited tutorial talk at the BOUT++ Workshop 2018, Livermore, California.

• 2017

• Impurity Migration Simulation of PISCES-A He Exposed Tungsten With GITR - Tim Younkin APS-DPP 2017, Milwaukee, Wisconsin.


• Calculations of Helium Bubble Evolution in the PISCES Experiments with Cluster Dynamics - Sophie Blondel, APS-DPP 2017, Milwaukee, Wisconsin.


• Overview of modeling plasma surface interactions in tungsten with a focus on connecting computational predictions to experimental observations - Brian Wirth, plenary presentation at the 18th International Conference on Fusion Reactor Materials, Aomori, Japan, 10 November 2017.