Publications and Presentations

- Annual Progress Reports
- Publications
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- Presentations
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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
- 2019 Annual Report (Year 2), submitted August 2019

Publications

- 2020
  - A Las, J M Canik, S Blondel, T R Younkin, D Curreli, J Drobný, P Roth, M Cianciosa, W Elwasif, D L Green and B D Wirth, Multi-physics modeling of the long-term evolution of helium plasma exposed surfaces, Physica Scripta T171 (2020) 014041
  - Wael Elwasif ; Ane Lasa ; Philip C. Roth ; Timothy Reed Younkin ; Mark R. Cianciosa, Nested Workflows for Loosely Coupled HPC Simulations, 2019 IEEE/ACS 16th International Conference on Computer Systems and Applications (AICCSA), Abu Dhabi, UAE, 2019, pp. 1-9

- 2019
  - 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).
• J. Güter, C. Johnson, D. Ennis, S. Loch and P. B. Snyder, Effects of the Chordula sheet on tungsten ionization and emission in tokamak divertors, Contributions to Plasma Physics (2019).

• 2018

Presentations

• 2020

• 2019


- Tiernan Casey, Khachik Sargsyan, Habib Najm, Uncertainty Quantification Workflows in Fusion Plasma Surface Interface Modeling, 61st Annual Meeting of the APS Division of Plasma Physics, Fort Lauderdale, Florida, October 21-25, 2019

- Chonglin Zhang, Gopakumar Perumpliy, Gerrett Diamond, Cameron Smith, Onkar Sahni, Agnieszka Trzuskowska, Mark Shepard, "An Unstructured Mesh Based Infrastructure for Exascale PIC Simulations", 61st Annual Meeting of the APS Division of Plasma Physics, Fort Lauderdale, Florida, October 21-25, 2019


- Mohammad Mustafa, Davide Curreli, Pablo Seleson, Cory Hauck, David Bernholdt, Verification and UO activities of the Particle-In-Cell code hPIC for Near Surface Plasma Conditions, Bull. Am. Phys. Soc. 61th Annual Meeting of the APS Division of Plasma Physics, CO7. 6, Fort Lauderdale, Florida, October 21-25, 2019


- Jon Drobny, Davide Curreli, Particle-particle simulations of plasma-material interactions, Bull. Am. Phys. Soc. 61th Annual Meeting of the APS Division of Plasma Physics, PS0.11, Fort Lauderdale, Florida, October 21-25, 2019

- Davide Curreli, Multi-Physics Surface Interactions in ITER (invited), International School on Cold Plasmas: Fundamentals and Applications, Ettore Majorana Foundation and Centre for Scientific Culture, Erice, Sicily, Sept 12, 2019


- Robert D Kolaisinski, Dwipaayans 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 shear 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, Ane Lasa, Sophie Blondel, John Canik, David L Green, Tim Younkin, Brian Wirth, Coupled PIC-BCA simulations of the near-surface plasma plasma at the ITER Outer Target, American Physical Society Division of Plasma Physics Annual Meeting, Portland, Oregon, November 6, 2018.
- 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 PM models, presented in part at the 23rd International Conference on Plasma Surface Interactions in Controlled Fusion Devices 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
- 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.