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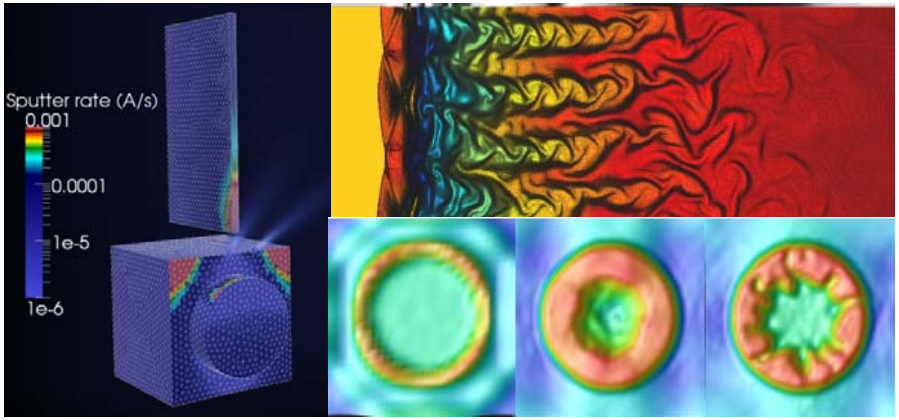
AVT-271 RWS on "Assessment of Capabilities for First-Principles Simulation of Spacecraft Electric Propulsion Systems and Plasma Spacecraft Environment"



Team leader(s):	**Justin Koo (USA)** **Anne Bourdon (FRA)**
Members:	**Giovanni Lapenta (ITA), Thierry Magin (BEL), Manuel Torrilhon (DEU)**
Partners:	**None**
Duration:	**NOV 2015 – OCT 2016**
Coordination:	RWS scheduled for 3rd week of June, Neuilly, France
Related activities:	Followon to AVT-ET-152

Objectives:

- Continue AVT-ET-152 effort to identify critical technology for feasibility of high fidelity simulation of plasma thrusters, plasma plume-spacecraft environment interaction, and the impact of space weather on spacecraft environment
- Perform topic selection for follow-on RTG proposal to implement recommendations of RWS

Topics covered:

- Multiscale plasma simulation / consistent plasma hierarchy including transport terms
- SoA models for plasma-material interactions
- Emerging trends in computational algorithms/HW/SW

Impact and Exploitation: (DOTMLPFI)

- Meeting Proceeding will document broad range of technical challenges to first principles simulation of partially ionized magnetized plasmas as well as potential numerical methods / experimental validation / theoretical analysis avenues to address these challenges
- Downselect actions from this broad range of possibilities will identify high-impact technological problems for more in-depth investigation
- TAP/ToR proposal package(s) for a follow on RTG(s) will be developed after RWS and presented in time for the Fall 2016 Panel Meeting