### COMET Plasma plume effects in the context of electric propulsion: a state of play

<table>
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<th>Time</th>
<th>Session</th>
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<tr>
<td>9:00 – 9:10</td>
<td>Welcome + Short introduction C. Boniface - CNES, P. Sarrailh - ONERA</td>
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#### 1) Experimental characterization and modeling of the plasma plumes

1.1 9:10 – 9:30  
Way of improving Electrical Thruster plumes modelling  
L. Garrigues – CNRS

1.2 9:30 – 9:50  
Particle-In-Cell models of Hall thruster plumes: from hybrid to full kinetic three-dimensional representation  
F. Taccogna -CNRS

1.3 9:50 – 10:10  
Effect of the geomagnetic field on the expansion of a 3d plasma plume: hybrid PIC/fluid simulations  
F. Cichocki, M. Merino, E. Ahedo – UC3M

1.4 10:10 – 10:30  
Characterization of Hall thruster plume by way of Langmuir probes, energy analyzers and ExB probes  
S. Mazouffre – CNRS

1.5 10:30 – 10:50  
Plasma plume characterization  
PQ. Elias, D. Packan – ONERA

**Coffee break (15 min)**

#### 2) Experimental characterization and in-flight experiments of plasma plume effects

2.1 11:05 – 11:25  
Modelling, Analysis and validation : plasma plume challenges  
B. Zitouni, J Laube – OHB

2.2 11:25 – 11:40  
Effect of erosion and contamination on the material thermal control and on the electrostatic discharge threshold  
V. Inguimbert – ONERA

2.3 11:40 – 11:55  
Arcing and direct-drive  
V. Inguimbert – ONERA

2.4 11:55 – 12:15  
Challenges to accurate ground measurements of plasma plume divergence in Hall thrusters  
O. Duchemin – SAFRAN

**Lunch (1h45)**

#### 3) Spacecraft plume interaction at the system level

3.1 14:00 – 14:20  
Modeling of the electrostatic behavior of the spacecraft interaction with plume at the Spacecraft system  
S. Hess, P. Sarraillh – ONERA

3.2 14:20 – 14:40  
Numerical simulations of electric propulsion multifiring  
V. Perrin, A.Sita, A. Iffly – TAS

3.3 14:40 – 15:00  
System analysis of erosion and contamination  
T. Lagrée – ADS

3.4 15:00 – 15:20  
RF Impact of HET Thruster on Antenna Radiation Patterns and On-board Receivers  
A. Piche – ADS

#### 4) Round table on the new missions and perspectives

15:20 – 16:30  
- Discussion and synthesis on the subjects treated during the previous sessions  
- What the new constraints for future missions?  
- Constraints on the plume effects can be take into account in the thrusters design ? or should be prevent at the system level or at the level of the other sub-systems?  
Everybody

**End of meeting**