Geophysical Research Abstracts
Vol. 20, EGU2018-12807-2, 2018
EGU General Assembly 2018

Physics of dust impacts in space - previous and future measurements from spacecraft

Ingrid Mann (1), Åshild Fredriksen (1), Ove Havnes (1), Tarje Antonsen (1), Arnaud Zaslavsky (2), Zoltan Sternovsky (3), Jakub Vaverka (4), Asta Pellinen-Wannberg (4), Frank Postberg (5), Jiri Pavlu (6), Joan Stude (7), Shengyi Ye (8), and Sigrid Close (9)

(1) UiT the Arctic University of Norway, Department of Physics and Technology, Tromsø, Norway (ingrid.b.mann@uit.no), (2) LESIA, Paris Observatory, Meudon, France, (3) University of Colorado, Boulder, CO, USA, (4) Dept. of Physics, Umeå University, Umeå, Sweden, (5) Heidelberg University, Heidelberg, Germany, (6) Charles University, Prague, Czech Republic, (7) German Space Center, DLR, Oberpfaffenhofen, Germany, (8) University of Iowa, Iowa City, IA, USA, (9) Stanford University, Stanford, CA, USA

The impacts of meteoroids and dust particles on solid targets in space generate free atoms, molecules and particulate fragments, most of them in a charged state. This impact ionization is used for many dust measurements in space, including measurements with Faraday-cup like detectors and mass spectrometers as well as dust impact detection with antenna field measurements. A number of space missions use or plan on using antenna measurements for characterizing dust populations in new, previously unexplored environments. An international team at ISSI Bern [1] brings together researchers who are studying different aspects of dust and dust impacts to compare space observations with ongoing laboratory and theoretical/numerical studies. The goal is to reconcile dust observations from previous missions, and to make recommendations for optimal operations for upcoming space missions with dust detection capabilities. The presentation gives an introduction to the work of this team.
[1] http://www.issibern.ch/teams/physdustimpact/