

Tuesday, August 9, 2016

POSTER SESSION: SPECIAL SESSION:

SMALL METEORITE IMPACTS – FROM ATMOSPHERIC ENTRY TO ENVIRONMENTAL EFFECTS

5:30 p.m. Poster Area

Pittarello L. McKibbin S. Goderis S. Soens B. Bariselli F. Barros Dias B. R. Zavalan F. L. Magin T. Claeys Ph.

[Meteorite Atmospheric Entry Reproduced in Plasmatron](#) [#6062]

Plasmatron facility allows experimental conditions that reproduce atmospheric entry of meteorites. Tests on basalt, as meteorite analogue, have been performed. Preliminary results have highlighted melting and evaporation effects.

Nicolau-Kuklińska A. Łosiak A. I.

[Formation of Vesicles Within the Fusion Crust of Eucritic Meteorites](#) [#6424]

Studying the development of fusion crusts will allow for the determination of the extent to which re-processing during atmospheric passage is changing the initial material of both meteorites and micrometeorites.

Micca Longo G. Bisceglia E. Longo S.

[Thermal Decomposition Rate of MgCO₃ as Representative Carbonate in Meteorites](#) [#6073]

We have studied the thermal properties of magnesite as a model meteor carbonate material. The decomposition rate is determined and an entry model has been developed including this effect in the determination of the equilibration temperature.

Demasi M. Britt D. T. Kring D. A.

[What do Meteorite Falls tell Us About the Strength of Asteroid Boulders?](#) [#6450]

One of the questions raised by the proposed Asteroid Retrieval Mission (ARM) is “what is the strength of a boulder on an asteroid’s surface?” One possible source of data is the meteorite collection and the observations of meteorite falls.

Räbinä J. Mönkölä S. Rossi T. Markkanen J. Gritsevich M. Muinonen K.

[Novel Methods for 3D Numerical Simulation of Meteor Radar Reflections](#) [#6329]

We model the radar reflections in a three-dimensional space as time-harmonic electromagnetic scattering from plasmatic obstacles. We introduce two novel methods for numerical simulation of meteor radar reflections.

Gritsevich M.

[Consequences of Meteoroid Impacts Based on Atmospheric Trajectory Analysis](#) [#6453]

We describe physical parametrization to group together (i) larger events, resulting in crater formation, (ii) meteorite-producing fireballs, and (iii) fully ablated meteor events with no surviving terminal mass.

Moreno-Ibáñez M. Gritsevich M. Trigo-Rodríguez J. M.

[Fireball Terminal Height Adjustment Using Scaling Laws and Dimensionless Variables](#) [#6509]

We introduce a theoretical basis and compute the terminal height values for large number of fireballs. We find these calculated values to be in good agreement with observational results.

Bronikowska M. Artemieva N. A. Wünnemann K. Szczuciński W.

[Determination of Meteoroids Dynamical Properties for Terrestrial Strewn Fields by Numerical Modeling](#) [#6312]

Strewn fields resulting from the disruption of cosmic bodies are common on planetary surfaces. Existing physical models of meteoroid interaction with the atmosphere enable to determine entry parameters of such events for terrestrial strewn fields.

Włodarski W. Papis J. Szczuciński W.

[Morphology of Morasko Crater Field: An Interaction of Glacial and Impact Landforms](#) [#6345]

Regarding the small sizes of impact craters, their potential superimposition on primary landforms may be complex. This study reveals this superimposition in the area of the Morasko Hill push moraine based on digital terrain modelling.

Szokaluk M. Muszyński A. Jagodziński R. Szczuciński W.

[*Properties of Ejecta Blanket Deposits Surrounding Morasko Meteorite Impact Craters \(Poland\)*](#) [#6516]

Morasko impact craters are a record of the fall of a meteorite into the soft sediments. The presented results illustrate the geological structure of the area around the crater as well as providing evidence of the occurrence of ejecta blanket.

Smaga A. Radaszewski R. Wierzbicki J.

[*On the Possible Influence of Small Impact on Geoenvironmental Properties of Subsoil*](#) [#6142]

The main aim of the study was to investigate the changes in geoenvironmental properties of non lithified deposits below the craters in comparison to genetically the similar types of sediments unaffected by impact.

Duczmal-Czernikiewicz A. Michalska D. Stankowski W. Mrozek-Wysocka M.

[*Morasko Meteorite Structure and Mineralogy*](#) [#6298]

The mineralogical and dosimetric tests on the crust of a number of meteorites were performed. The SEM-EDS analyses and the preliminary interpretation of the structures of the crusts were supported with detailed microscopic tests.

Duczmal-Czernikiewicz A. Muszyński A.

[*Clay Minerals in the Sediments from the Region of Fall of Morasko Meteorite*](#) [#6301]

Over 5000 years ago a meteorite shower left at least hundreds of meteorite pieces and several impact craters. Primary and secondary components in grain fractions of tills and clays were investigated.

Duczmal-Czernikiewicz A. Muszyński A.

[*Microdeformations at the Contact Zones of the Morasko Iron Meteorite with Surrounding Sediments — Likely Evidence of Meteorite Impact*](#) [#6303]

Deformed or crushed grain clasts in the sediments around the meteorite fragments clearly indicate the meteorite fall. A small range of the observed microstructures in the deformation zones can only be the result of a small meteorite fall.

Wilk J. Zanetti M. Losiak L. Joehlet A. Välja R. Wisniowski T. Pavel K. Kukko A. Kaartinen H. Plado J. Zhu M. Geppert W. D.

[*Kaali Impact Crater: A Structural Investigation of a Small Crater Based on 3D Laser Scanning, Strike and Dip Measurements, Ground Penetrating Radar, Electro-Resistivity Tomography and iSale-2D Numerical Modeling*](#) [#6556]

We investigated the Kaali crater-strewn-field by means of structural field mapping, geophysics and 3D laser scanning.

Zhu M. -H. Bronikowska M. Losiak A.

[*The Formation of Kaali Crater, Estonia: Insights from Numerical Modeling*](#) [#6325]

The formation of Kaali crater was studied by numerical modeling.

Anfinogenova Y. Anfinogenov J. Budaeva L. Kuznetsov D.

[*Geomorphological Features Potentially Associated with the 1908 Tunguska Catastrophe*](#) [#6103]

We studied geomorphological features of the 1908 Tunguska catastrophe by decoding aerial photographs and doing field studies. Several de novo geomorphological formations were identified as potentially associated with the 1908 Tunguska event.