

Tuesday, March 14, 2006
POSTER SESSION I: IMPACTS: MODELING AND STRUCTURES
7:00 p.m. Fitness Center

Shuvalov V. Trubetskaya I.

Numerical Modeling of Impact Induced Aerial Bursts [#1075]

The purpose of this paper is to study numerically an influence of impact angle and projectile velocity on the processes accompanying aerial bursts.

Shuvalov V. V. Artemieva N. A.

Impact Ejecta Escaping the Moon [#1168]

We calculate the mass of escaping ejecta on the Moon as a function of projectile type and impact angle to address the questions: 1) Does the Moon gain or lose its mass? 2) Are solid escaping ejecta a source of lunar meteorites? 3) How much vapor is in escaping plume?

Artemieva N. A.

Fluidized Impact Ejecta and Volcanic Blast Surge — Numerical Modeling [#1525]

3D numerical simulations of a volcanic eruption similar to Mount St. Helens lateral blast is presented. Modelled distribution of pyroclastics is compared with geological data. Perspectives for impact ejecta modeling (Chicxulub, rampart craters) are discussed.

Ormö J. Lepinette A.

Numerical Simulation of Heating of Target at Crater-Field-forming Impact Events [#1351]

We show that small (10–100 m) meteorite craters may have significant amount of target material heated to several hundred degrees. Some meteoritic and heated material are spread as ejecta, but the majority remains within the crater, most likely at great depth near the center.

Kenkmann T. Jahn A. Wünnemann K.

“Block Size” in a Complex Impact Crater Inferred from the Upheaval Dome Structure, Utah [#1540]

To better define acoustic fluidization parameters for numerical models of impact crater formation, the block size distribution was determined in a 7 km crater. We found a trend of increasing block size with increasing distance from the center.

Hiraoka K. Arakawa M. Seto M. Nakamura A. M.

Measurement of Compressive and Tensile Strength of Ice-Silicate Mixtures [#1602]

We measured the compressive and tensile strength of the ice-silicate mixture at low strain rate. Using these strengths, we discuss the results of impact cratering on ice-silicate mixture targets.

Anderson J. L. B. Schultz P. H.

Flow-Field Center Migration During Oblique Impacts: Implications for Curved Uprange Ejecta Rays [#1726]

Ejecta dynamics measured using 3D PIV during experimental oblique impacts constrain the three-dimensional migration of uprange, downrange, and lateral flow-field centers. These data are used to model uprange ejecta deposits at planetary scales.

Nazarova K. Bland P. A.

Numerical Modelling for Strength Estimation of Fragmenting Meteoroids [#1825]

We used the model of separate fragments (SF) to model the crater fields. The comparison of the measured and estimated values of material strength of meteoroids was performed. The separate fragments model application was shown for the Morasko iron shower.

Baldwin E. C. Vocadlo L. Crawford I. A.

Influence of Target Yield Stress on Crater Dimensions: A Numerical Approach Based on Chicxulub [#1887]

AUTODYN is used to consider the influence of target yield stress on crater dimensions, based on parameters appropriate for Chicxulub.

Senft L. E. Stewart S. T.

Modeling Impact Cratering into Layered Targets [#2210]

We (i) implement a new strength model into the shock physics code CTH to more accurately describe impacts into rocks, and (ii) begin to study the outcome of impacts into layered targets, including modeling selected terrestrial craters.

Byrne C. J.

Radial Profiles of Lunar Basins [#1900]

Radial profiles of selected lunar basins were generated from Clementine elevation data. An empirical model represents the entire profile of the inner basin, rim, and ejecta. New data is provided on isostatic adjustment.

King D. T. Jr. Ormö J. Petruny L. W. Morrow J. R. Neathery T. L.

Excavation and Modification of the Late Cretaceous Wetumpka Impact Structure (Alabama), a Shallow Marine Impact Feature [#2019]

Wetumpka impact structure, a 7.6 km diameter feature of the inner coastal plain, has a distinctive breached rim morphology, interior crater fill of broken sedimentary formation, and an exterior disturbed terrain that show the effects of excavation and modification within a shallow sea.