

Thursday, March 22, 2018
IMPACTS II: MODELING
8:30 a.m. Waterway Ballroom 6

[R504]

Chairs: **Hannah Susorney**
Katarina Miljkovic

- 8:30 a.m. Gabriel T. S. J. * Jackson A. P. Asphaug E. I.
[Updated Scaling Laws for Collisions of Gravity-Dominated Bodies with Special Treatment for Hit-and-Run Collisions](#) [#2893]
 We report refined scaling laws for impacts between gravity-dominated bodies that fit for a range of compositions from volatile rich to undifferentiated planets.
- 8:45 a.m. Stickle A. M. * Rainey E. S. G. Owen J. M. Raducan S. D. Bruck Syal M. et al.
[Modeling Momentum Enhancement from Impacts into Rubble Pile Asteroids](#) [#1576]
 Momentum enhancement from impacts into rubble piles can be very different than from impacts into coherent asteroids and depends on specific material properties.
- 9:00 a.m. Sugiura K. * Kobayashi H. Inutsuka S.
[Numerical Simulations of Planetesimal Collisions: The Relationship Between Impact Conditions and Resultant Shapes](#) [#1363]
 Our numerical simulations of equal-mass planetesimal collisions find impact velocities and angles to form elongated shapes of impact outcomes.
- 9:15 a.m. Elliott J. R. * Melosh H. J.
[The Effects of Target Heterogeneities on Impact Spallation and Fragmentation](#) [#2664]
 Fragment sizes aren't / Increased by local changes / In stratigraphy.
- 9:30 a.m. Manske L. * Wünnemann K. Nakajima M. Plesa A.-C.
[Impact-Induced Melting by Giant Impact Events](#) [#2269]
 We quantify impact-induced melt production caused by shock heating and decompression considering the targets initial temperature gradient using numerical models.
- 9:45 a.m. Stewart S. T. * Lock S. J. Caracas R.
[Raining a Magma Ocean: Thermodynamics of Rocky Planets After Giant Impacts](#) [#1708]
 Water dissolves in silicate fluid during the impact. After silicate rain, the magma ocean surface forms at high pressures and temperatures. Where is the water?
- 10:00 a.m. Carter P. J. * Lock S. J. Stewart S. T.
[The Energy Budgets of Giant Impacts](#) [#2731]
 Large amounts of energy are exchanged during giant impacts. How different are the energy budgets amongst proposed models for the Moon-forming impact?
- 10:15 a.m. Harwell M. H. * Wünnemann K.
[A New Model for the Steinheim Impact Crater Using iSALE-2D](#) [#3008]
 A new model taking into account acoustic fluidization, impactor energy, and erosion for the Steinheim impact crater.
- 10:30 a.m. Miljkovic K. * Cox M. A. Cavosie A. J. Timms N. E. Bland P. A. et al.
[Numerical Modelling of the Formation of the Yallalie Impact Structure](#) [#1806]
 Yallalie is the name / recently gained crater fame. / We show how it came to be / and it's shocked ejecta meant to be.

- 10:45 a.m. Martellato E. * Wünnemann K.
[Complex Crater Formation: Insight from Numerical Modeling](#) [#2502]
We numerically modeled complex impact craters with iSALE code to study acoustic fluidization, and the dependence of crater morphometry on model parameters.
- 11:00 a.m. O'Brien H. C. * Neal C. R. Pickersgill A. E.
[Comparing Terrestrial and Lunar Impact Melts Using Crystal Size Distribution Method](#) [#2053]
Impact melts really rock / Terrestrial and lunar / How do they differ?
- 11:15 a.m. Susorney H. C. M. * Daly R. T. Barnouin O. S. Stickle A. M. Ernst C. M. et al.
[Effects of Coarse-Grained Targets on Crater Morphology](#) [#1119]
We have performed a series of CTH simulations into how coarse-grained targets affect crater morphology.
- 11:30 a.m. Canup R. M. * Salmon J.
[Origin of Phobos-Deimos by the Impact of a Vesta-to-Ceres Sized Body with Mars](#) [#2598]
We use impact and disk accretion simulations to place new constraints on the type of impacts capable of producing Phobos-Deimos.