

+

#0154

+

An attempt to visualise the innards of shatter cones with micro-computed tomography.

Zaag*, P.T., Reimold, W.U. and Hipsley, C.A.,
*Museum für Naturkunde, Leibniz Institute at Humboldt
Universität, Invalidenstraße 43, 10115 Berlin, Germany.
patrice.zaag@mfn-berlin.de.

Shatter cones are the only meso- to macroscopic feature diagnostic for meteorite impact craters. The unique fracture phenomenon has a conical shape with surface striations diverging from its apex; sizes vary from < 1 cm to 12 m. Mechanisms of their formation are still controversial, however all theories agree that shatter cones form when a shock wave encounters an inhomogeneity, at shock pressures between 2 and 45 GPa.

In this study an attempt has been made to correlate these surface fractures with internal features by micro-computed tomographic (μ CT) scanning. A shatter coned sandstone sample from the Serra da Cangalha impact structure (Brazil) was scanned with a resolution of 0.013 mm per voxel. To verify the results of the μ CT scan, a series of parallel thin sections of the same specimen was prepared and compared with 2D- μ CT-cross-sectional images. During the petrographic studies PDF, PF and FF were found throughout the $\sim$ 5 cm thick sample. Implications for the formation of shatter cones are discussed.

+

+

Cite abstract as:

Zaag, P.T., Reimold, W.U., Hipsley, C.A. (2012) An attempt to visualise the innards of shatter cones with micro-computed tomography. Paneth Kolloquium, Nördlingen (Germany), abstract URL: <http://www.paneth.eu/PanethKolloquium/2012/0154.pdf> (abstract #0154).