Contribution ID: **120** Type: **Oral**

The thermo-viscous and shock remanent magnetisation recorded in the Chesapeake Bay impact crater, Virginia.

During impact events, planetary crusts experience high pressures that can impart rocks with shock remanent magnetisation (SRM) if an ambient magnetic field or demagnetise rocks if a field is absent. If rocks experience substantial impact heating or are pressurised above ˜40 GPa (inducing melting and recrystallization) they may instead record a thermo-viscous remanent magnetisation (TVRM) as they cool below their Curie temperatures. Understanding impact re-magnetisation is crucial for studying terrestrial impact craters, but also unraveling the history of long-lived core dynamo fields on other planetary bodies. In this research we studied impact-related re-magnetisation recorded in natural rock samples from the Chesapeake Bay impact crater, Virginia. As a case study, here we discuss the natural remanent magnetisation (NRM) of two samples of different rock types: a suevite (sample ITH9-UI, depth 1.40 km beneath the ground) and a schist (sample STH32, depth 1.67 km beneath the ground) using thermal and alternating field demagnetisation. The suevite represents a sample that contains material that experience impact remelting, whereas the schist represents an unmelted rock. From the NRM spectra, we found that the sample ITH9-UI was remagnetised by TVRM due to impact-related heating, while the sample STH32 shows the indication of shock demagnetisation.

Authors: Dr SUPAKULOPAS, Radchagrit (Prince of Songkla University and Rutgers University); Dr TIKOO, Sonia M. (Stanford University and Rutgers University)

Presenter: Dr SUPAKULOPAS, Radchagrit (Prince of Songkla University and Rutgers University)

Track Classification: Environmental Physics, Atmospheric Physics, Geophysics and Renewable Energy