Calculations:
- Given crater diameter (known from JHAPIL Mercury crater database shapefile): we calculate the transient crater diameter (Dtc) for craters of interest.
- Assuming planet dependent constants (surface gravitation, speed of impact, density of impactor and crustal rocks).
- Dtc used to estimate the crater excavation depth.
- To calculate max melting depth, we use a high order polynomial fit (provided by Dr. Ernst) to summarize the necessary impact calculations: including quantities like entropy, energy, and pressure.

Interpolation of estimated depth surfaces:
- Select depth to material crater to crater
- Use depths to interpolate a surface for each material
- Two methods (built-in tools in spatial analyst):
  - Spline
  - Kriging
- Input: point values
- Outputs: surface raster

Conclusions:
- Maps that approximates the minimum upper boundary depth for each material with a surface
- These are preliminary results: more processing power and data-points could increase scale and accuracy of this technique.