

Unravelling the geological history of cratered worlds through machine learning techniques

Thanks to advances in machine learning, it is now possible to analyze high-resolution imagery dataset of planetary surfaces offered by space probes acquired over the last decades. During this presentation, I will introduce a machine learning algorithm capable of detecting millions of impact craters on Mars, the Moon and Mercury. I will show how it can be used to visualize the cratering record of terrestrial bodies, infer their geological history, the properties of the surface as well as the evolution of impactor reservoirs through case studies. I will finally present the usefulness of such an algorithm for the analysis of future imagery datasets.