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Alteration of Grains by Electrical Charging in Cometary Comae

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The COmetary Secondary Ion Mass Analyzer (COSIMA) instrument on-board the Rosetta spacecraft allows the collect and analysis by mass spectrometry of dust from the coma of 67P/Churyumov-Gerasimenko. During its journey from the cometary nucleus to the instrument, the composition of the grains has likely been modified. In order to trace back their original composition, we aim to compare, through laboratory simulations, different types of processes affecting the grains after being ejected from the cometary surface in conditions relevant to the coma of 67P/Churyumov-Gerasimenko. We will focus in particular on the effect of charging on the grains chemistry.