



## **A Machine Learning Technique Applied to Plasma Measurements: Protons and Alpha Particles Identification**

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We present a new technique to separate alpha particles from protons in the data collected by an electrostatic analyzer of top-hat type. This type of sensor has been adopted for the payload of several missions dedicated to study space plasmas. A top-hat analyser is able to measure the particles' energy-per-charge and their incoming direction, giving the possibility to reconstruct the particles velocity distribution function. However, if this sensor is not accompanied by a time-of-flight section it cannot distinguish among different kinds of ions with different mass and charge. Nevertheless, adopting specific fitting procedures it is possible to discriminate, at the most, alpha particles from protons. In this work we show, for the first time, an alternative procedure based on machine learning algorithms that we are developing for a possible use on space plasma measurements.