



## **Forecasting the arrival of ICMEs throughout the heliosphere**

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ICME (Interplanetary Coronal Mass Ejection) are violent phenomena of solar activity that affect the whole heliosphere and the prediction of their impact on different solar system bodies is one of the primary goals of the planetary space weather forecasting.

We realized a procedure based on the Drag-Based Model (Vrsnak et al., 2013, Napoletano et al. 2018) which uses probability distributions, rather than exact values, as input parameters, and allows the evaluation of the uncertainty on the forecast.

We tested this approach using a set of CMEs whose transit times are known, obtaining extremely promising results.

We present some further results from the application of this model to propagate a sample of ICMEs from their sources on the solar surface into the heliosphere. We made use of recent works by Prise et al. (2015) and Witasse et al. (2017) who tracked the ICMEs through their journeys using data from several spacecraft, tracing the ICMEs trajectory farther than Earth.

Considering the extremely short computation time needed by the model to propagate ICMEs, it is a promising candidate for Space Weather application and to forecast ICME arrival to planetary bodies in the whole heliosphere.