



## **A Multi-Model Approach to the Analysis of the Kinematics of CMEs Based on Multi-point Space Observations**

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The interaction between Coronal Mass Ejections (CMEs) and the ambient solar wind is a crucial factor affecting their interplanetary evolution. It is believed that acceleration due to the Lorentz force dominates CME evolution near the Sun and that the aerodynamic drag force becomes dominant further away. In this study, we present results of a distance-dependent aerodynamic drag force model taking into account solar wind measurements from the Helios spacecraft over the spatial range 0.3 to 0.9 AU. We undertake GCS modelling of the investigated CMEs based on observations from the coronagraphs on SOHO and STEREO as well as observations from the STEREO heliospheric imagers (HIs). Application of the CGS modelling to the HI data enables the height-time profiles of the CMEs to be extended further from the Sun. To derive transit times to 1 AU, the height-time profiles are then fitted using a kinematic drag model and compared with in-situ solar wind measurements. The study is carried out in the framework of the EU FP7 project HELCATS (Heliospheric Cataloguing, Analysis and Techniques Service).