

ESTIMATING DORIS DRAG COEFFICIENTS: TOWARD AN OPTIMUM IDS ANALYSIS STRATEGY ?

M.-L Gobinddass^{1,3}, P. Willis^{1,2},

¹*Institut de Physique du Globe de Paris, Paris, France*

²*Institut Géographique National, St-Mandé Paris, France*

³*Institut Géographique National, Marne-La-Vallée, France*

Abstract

Currently in all DORIS data processing, atmospheric drag models needs to rescaled by empirical parameters estimated every few hours depending on the satellite altitude. The goal of this presentation is to investigate if a better choice exists for this rescaling technique (how often? Impact of time constrains? should it be satellite-dependent?). By selecting a few weeks of DORIS data, we will compute single-satellite solutions in several cases of time interval and time constrains of atmospheric drag coefficients in the case of SPOT-2, ENVISAT and other satellite. In particular, periods of intense geomagnetic storms (November 2003) as well as quieter periods will be analyzed. Different analysis strategies will be compared on the same data sets for several geodetic parameters of interest : internal chi²/DOF agreement, weekly station position, geocenter offset or daily Earth's polar motion. Early results show that the current analysis schemes used by all IDS analysis groups are not optimum and that better results could be obtained with a more frequent reset of these drag parameters (less than 1 hour). Finally more sophisticated estimated method (random walk approach) will also be discussed.