Coordinated measurements of the dayside magnetopause observed by Cluster and Double Star

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During the Spring of 2004 and 2005, the Cluster orbit preferentially sampled the high and mid altitude cusp region in the northern hemisphere. The Doublestar one, TC-1, spacecraft sampled either the subsolar region of the magnetopause, or southerly latitudes, on a number of passes. In comparison, the Doublestar two, TC-2, spacecraft sampled the low altitude cusp and cleft regions in both hemispheres. We review coordinated CLUSTER-Double Star conjunctions for a number of dayside passes to investigate reconnection associated signatures observed at different locations, both in terms of transient FTEs, arising from opened flux ropes during intermittant reconnection, and comparative boundary layer signatures during cusp and magnetopause transitions. We attempt to quantify differences in the structure and dynamics of the magnetopause boundary layer between the spacecraft locations. We also track the polarity and motion of flux tubes implied from the occurance of FTEs, observed at the different spacecraft, in order to map to the most probable reconnection sites under a variety of upstream conditions. In one example, on 6 April 2004, the observations are consistent with ongoing reconnection on the dayside magnetopause during which both Cluster and TC-1, lying north and south of a reconnection line, respectively, observe a series of FTEs. This work was borne out of the activities of an ISSI working group on comparative Cluster-Double Star measurements of the dayside magnetosphere (ISSI, Berne, Switzerland).