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Monitoring ionospheric plasmas in space weather context via DSLP observations on board Proba-2

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The experiment Dual Segmented Langmuir Probe (DSLP) on board Proba-2 spacecraft (ESA) provides a long-term continual survey of basic plasma properties measured in situ in the dawn and dusk sectors of the upper terrestrial ionosphere. DSLP observations are acquired by two identical segmented spherical Langmuir probes representing a novel approach to a well developed plasma diagnostic technique. Starting its nominal operations in May 2010 almost four years of regular observations are currently being available providing a substantial data set for monitoring observed ionospheric disturbances and irregularities in view of potential space weather drivers. Here we present initial DSLP data scientific applications including seasonal or immediate variations of derived plasma properties in comparison with possible effects of sudden solar events or long term trends in the overall solar activity. In addition we present an on-line data archive build on complete DSLP data set where all raw measurements are routinely being processed into calibrated higher level data products derived from the PDS and CDF standards and made available throughout web interface.