



Response of the H-geocorona to geomagnetic disturbances studied by TWINS Lyman-alpha data

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We have studied the variation of the exospheric H-density distribution during two geomagnetic storms of different strength in terms of their Dst-index values. This analysis is based on continuously monitored Lyman-alpha data observed by the TWINS1/2-LAD instruments. Since solar Lyman-alpha radiation is resonantly backscattered from geocoronal neutral hydrogen (H), the resulting resonance glow intensity in the optically thin regime is proportional to H-column density along the line of sight (LOS). We quantify the amplitude of the H-density's response to geomagnetic activity for different (observed) angular regions and radial Earth-distances. Interestingly the H-exosphere responded with a comparable density increase to both storms of different strength. Careful analysis of the geomagnetic H-density effect indicates that the temporal density response is well correlated with the Kp-index daily sum, but not with the Dst-index in case of the two analysed storms.