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A possible Kelvin-Helmholtz instability at Mars?

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We have investigated the induced magnetosphere boundary (IMB) at Mars using data from the ASPERA-3 instrument on Mars Express. We use data when the ion sensor is run in a mode without any angular scanning and hence is providing a 2D-distribution with a higher time resolution. We focus on orbits where there is a periodic signature in the ion spectrograms close to the IMB. The signatures appear to be oscillations in the density of the solar wind ion species, that is, protons and alpha-particles. The frequency of the variations is 10-50 mHz. Our observations are made on the dayside and/or close to the terminator and the approximate flow direction of the ions is parallel to the IMB. Similar oscillations in particles densities have previously been observed on the nightside. In that case the periodic signature was seen in the spectra of heavy ions (single-charged oxygen and carbon dioxide) and interpreted in terms of a shear-driven instability.