MHD effects as a consequence of the solar wind surrounding Venus and Mars

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Although Venus and Mars does not have a magnetosphere similar as Earth, a obstacle is developed due to the solar wind interaction, namely its ionopause. This situation has a number of consequences for theoretical considerations. In fact, we show that there exists a magnetic barrier, which makes the magnetosheath more thick than it is expected from pure gasdynamic considerations. In addition, mass loading makes the magnetosheath even more extended, which brings its thickness basically very near to measurements. Another effect at Venus and Mars results from its strong curved magnetic field in the region outside of the ionopause. This situation is different to other planets and may lead to the appearance of an inter-change instability in the subsolar region. In addition, the appearance of the Kelvin–Helmholtz–instability in the ionopause and their effect on ion–loss from both planets will also be discussed.