

A Transplanet model of magnetosphere-ionosphere coupling at Earth, Mars, Jupiter, (Saturn and Venus)

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Abstract

Under Horizon 2020, the Europlanet 2020 Research Infrastructure (EPN2020-RI, <http://www.europlanet-2020-ri.eu>) includes an entirely new Virtual Access Service, “Planetary Space Weather Services” (PSWS) that extends the concepts of space weather and space situational awareness to other planets in our Solar System and in particular to spacecraft that voyage through it.

PSWS will provide at the end of 2017 12 services distributed over 4 different service domains – 1) Prediction, 2) Detection, 3) Modelling, 4) Alerts. These services include in particular a Transplanet model of magnetosphere-ionosphere coupling at Earth, Mars, and Jupiter that enables the users to make runs on request of the model, archive and/or connect the results of their simulation runs to various tools developed in the Virtual Observatory. The present paper will first describe the Transplanet model (at Earth, IPIM, Marchaudon & Blelly, 2015), and then present the system architecture developed by the Space Plasma Physics Data Center (<http://www.cdp.eu>) in France in order to make the service operational (<http://transplanet.irap.omp.eu>). Europlanet 2020 RI has received funding from the European Union’s Horizon 2020 research and innovation program under grant agreement No 654208.

References

Marchaudon, A., and P.-L. Blelly, A new 16-moment interhemispheric model of the ionosphere : IPIM, J. Geophys. Res., 120, doi:10.1002/2015JA021193, 2015.