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BOOK OF ABSTRACTS

Forecasting the occurrence of degraded positioning conditions for real time precise GPS applications.

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Precise real-time applications of GPS, like the so-called Real Time Kinematic technique, make use of phase measurements which are ambiguous. To obtain precise (cm-level) positions in real time, it is necessary to solve these ambiguities. Most of the ambiguity resolution techniques need to make assumptions about the ionospheric variability : a high ionospheric small-scale (a few kilometres) variability can lead to ambiguities which are not correctly solved or even to the impossibility to solve ambiguities. The paper shows the strong correlation we have observed between the level of ionospheric variability at Dourbes (Belgium) and the local K geomagnetic index. Based on this correlation study, the paper outlines how, based on local K forecasts, we can issue warning messages when the ionospheric variability is expected to reach levels which will degrade the precision of phase-based real time application of GPS.

Oral presentation