



## **Influence of the ionospheric model on DCB computation and added value of LEO satellites**

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In order to compute inter-frequency Differential Code Biases (DCBs), the Geometry-Free combination of a GNSS signal pair needs to be corrected from the ionospheric refraction effect. Such information is obtained using either Global Ionospheric Maps (GIMs) or local models. In this work we investigate the influence of GIMs on the final value and precision of DCB solution. The study covers different ionospheric conditions, ranging from very quiet ionospheric background up to a severe ionospheric storm.

In a first step, the Slant Total Electron Content (STEC) between GIMs is assessed as a function of receiver latitude, elevation mask and ionospheric conditions. Then, daily DCBs are estimated using these different GIMs, receiver and satellite contributions being separated using a zero-mean constraint. If the precision of satellite DCBs is clearly dependent on ionospheric conditions and of the observing network, the choice of the GIM seems also to have a non negligible impact.

At last, an independent estimation of DCBs is performed using Low Earth Orbit (LEO) observations (such as JASON's GPS data). This solution is compared with our ground network solution and with DCBs coming from the International GNSS Service.