



Real time scintillation monitoring via ROTI with the GDGPS System

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Real-time, global scintillation monitoring is now being offered by the Global Differential GPS (GDGPS) System [www.gdgps.net] based on Rate of TEC Index (ROTI) as a proxy for S4 and $\sigma\phi$. The ROTI are derived from 1 Hz dual -frequency GPS and GLONASS phase measurements tracked and collected in real-time by the vast GDGPS tracking network.

We will report on the performance of the ROTI as a proxy for S4 and $\sigma\phi$ using specialized scintillation receivers at low-and high-latitude regions. We are able to classify receiver types based on their ROTI noise floor. We found that for low noise receivers, ROTI > 0.5 TECU/min is a good indicator of ionospheric irregularity or scintillation activity.

We will describe the operational aspects of productizing the ROTI within the GDGPS System, and discuss the benefits from adding GLONASS data to GPS, and the additional benefits expected from the future availability of Galileo signals.