



Contribution ID: 93

Type: **Poster Presentation**

## Computerised Ionospheric Tomography (CIT) for supportive GNSS-derived ionospheric applications.

*Tuesday, 26 June 2018 15:00 (2 hours)*

Computerised Ionospheric Tomography (CIT) is a technique where multiple measurements from signals modulated when passing through an object, are used as inputs to reconstruct the three-dimensional structure of the object by employing mathematical inversion techniques. In CIT the “object” is the spatial distribution of the electron density composition of the Earth’s Ionosphere, i.e., the ionised component of Earth’s atmosphere extending from about 50-2000 km above Earth. SANSAs’ Matlab-based TEC imaging system utilizes GPS observations as available from the IGS network (<http://www.igs.org/network>). RINEX observations files from regional GPS receivers are processed to yield regional 2D TEC maps. The objective of the project is to develop necessary algorithms and software to apply the MIDAS system for ionospheric tomography (developed by the University of Bath) to derive 2D TEC images using data from the African Equatorial region to support other ionospheric applications such as TEC gradient studies for deriving scintillation proxies.

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**Session Classification:** Poster Session 1

**Track Classification:** Track D2 - Space Science