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SQUID Magnetometer Filter Design and Data Analysis

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Abstract content (Max 300 words)Formatting & Special chars

The observation of very low magnetic fields is of primary importance for a better understanding of Earth and environment, as well as for early warning of potential hazards coming from space. Recent scientific studies have shown that magnetometers based on Superconducting QUantum Interference Devices (SQUID's) are able to detect magnetic storms in the upper atmosphere with a sensitivity far better than that of conventional magnetometers. This project involves filter design to analyze the data and a study of SQUID data, both from a low-Tc SQUID located underground at the Low Noise Laboratory (LSBB), France, and data from the high-Tc SQUID operating unshielded at SANSa Space Science, Hermanus, South Africa. The two SQUIDs form the first two nodes of a worldwide SQUID network aimed at identifying ionospheric, magnetic and/or seismic events using very sensitive magnetic measurements. The first step is an investigation into the correlation between the SQUID data from both locations, given that one SQUID is more sensitive and operates shielded, and the other SQUID is less sensitive and operates unshielded.

Apply to be considered for a student award (Yes / No)?

Yes

Level for award (Hons, MSc, PhD, N/A)?

Hons

Main supervisor (name and email) and his / her institution

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Would you like to submit a short paper for the Conference Proceedings (Yes / No)?

No

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Yes

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