D-35 Geomagnetic and self-potential anomalies at the Maha-Oya thermal spring - Eastern Sri Lanka

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Maha-Oya thermal spring is situated in the Vijayan series of rocks in eastern Sri Lanka. High gravity gradients around Maha-Oya had been interpreted as a block faulting of the crust. Water emerging from the thermal springs are considered to flow through these faults. One objective of this research is to locate geologic boundaries or faults around the Maha-Oya thermal spring, by mapping the geomagnetic total scalar field and the ground self potential.

Geomagnetic scalar total field values were measured by 2 proton precession magnetometers (PPM). One automatic PPM recorded the diurnal variation while the other mobile PPM recorded the geomagnetic field at different locations. The locations were fixed by a Global Positioning Satellite System. Field data were corrected for diurnal variation and IGRF of 40,000nT subtracted to obtain the anomaly values. Self potential measurements were made with copper-copper sulphate non polarising electrodes and a high impedance digital multimeter. Electrode spacing was 20m. Leap frog measurement technique was used with electrodes interchanged in successive measurements to avoid accumulation of zero errors.

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