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Total Field Magnetic Anomaly at Mahapelessa Hot Spring and a Comparison with Resistivity Soundings

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A proton precision total field magnetic survey was conducted along 45 km of country roads and jungle tracts of a 20 km2 region around the Mahapelessa thermal spring in southern Sri Lanka. A computer based automatic magnetometer at a base station recorded the daily variations of the geometric field while the field data was recorded manually at 25 m intervals by a mobile magnetometer. A total field residual geometric map is presented after the removal of the regional field taken as the least square plane of the original data set. Anomaly map indicate a E-NE magnetically high feature of ~1 km long but may continue further. Subsurface magnetism modeled across the strike direction with GRAVMAG indicates fracture zones dipping ~ 450 towards N-NW and is consistent with the resistivity and self potential analysis reported earlier.