

## **NEW MAGNETIC SUSCEPTIBILITY DATA FROM THE HIGHLAND AND WANNI COMPLEXES AND THEIR POSSIBLE APPLICATION FOR CRUSTAL BOUNDARY DELINEATION**

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Precambrian basement of Sri Lanka consists of three major lithotectonic units named as the Wannai Complex (WC), Highland Complex (HC) and the Vijayan Complex (VC). These three crustal blocks show significant lithological and isotopic differences. Isotopic differences have been used to broadly demarcate the boundaries of crustal blocks. This study aims to acquire susceptibility data from the Central Highland area and some parts of WC and Southwestern HC in order to investigate whether there are subtle differences that would be helpful for demarcating the HC-WC boundary and/or different lithological domains.

Magnetic susceptibility is one of the easily measurable petrophysical parameters and it is a measure of the extent to which a substance becomes magnetized when it is placed in an external magnetic field. It can be measured on rock outcrops. Magnetic susceptibility measurements of rock outcrops were taken from KT-9 Kappameter. Several traverses across the HC (Kandy-Medamahanuwara-Mahiyangana, Kandy-Randenigala-Badulla, Balangoda-Haputale-Beragala-Wellawaya-Ella), and (Habarana-Polonnaruwa-Medirigiriya -Kantale) and WC (Matale-Kurunegala-Dambulla-Anuradhapura-Vavunia) routes were covered obtaining 3-6 reading sets at each location depending on outcrop size and variation. Each reading set contains ten measurements. Thus, total number of readings so far obtained is around 10620. HC including its South-Western area and Northern extension is an entity with dominantly very low magnetic susceptibility values. In contrast, WC is composed of rocks with varying and higher susceptibility values. This transformation of magnetic susceptibility from low values to higher values may manifest the HC-WC boundary proposed by previous studies. A detailed magnetic susceptibility survey of rock outcrops in conjunction with lithological, petrographic and chemical studies may be helpful in better demarcation of the said boundary.

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