Theodolite-borne vector Overhauser magnetometer: DIMOVER

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Abstract: This report covers results of the long-term research directed at developing an absolute vector proton magnetometer based on the switching of bias magnetic fields. The distinctive feature is the attempt of the installation of a miniature Overhauser sensor and optimized Garret solenoid directly on the telescope of the theodolite. Thus this design (Declination Inclination Modulus Overhauser magnetometer: DIMOVER) will complement the universally recognised DIflux absolute device by adding full vector measurement capability. Preliminary designs, which also can be interesting to the experts in vector proton magnetometers, are presented.

Author Keywords: DIflux; Magnetic declination; Magnetic inclination; Magnetic observatory instrumentation; Overhauser magnetometer

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