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Selecting an Observatory System – dIdD Compared with Fluxgate Alternatives

GEM's Suspended delta Inclination delta Declination (dIdD) product has been available since September 2003. Since its introduction, the system is continuing to gain popularity against standard fluxgate installations.

In this brief review, we look at some of the advantages of dIdD for today's magnetic observatory work:

- dIdD is a complete magnetometer system for measuring magnetic components and total field (it does not require a theodolite to set up)
- Suspended version has low temperature coefficient and low aging / long term drift (<2 nT / year) as compared with fluxgates (which may drift by as much as 1 nT / day)
- Low temperature coefficient as compared with best fluxgates that vary by 0.1 nT / degree
- Easy-to-adjust orthogonality
- Very low orthogonality error due to a very precise means of adjusting (using cross coupling between sensor coils)
- No linearity problems (an issue with fluxgate systems)
- All fields measured in absolute values (0.1 nT sensitivity)
- Have no specified range of operation (i.e. single broad range only) unlike fluxgates which require adjustment to correct range
- Bandwidth is high (up to 1 reading per second)
- Operating range is broad (-40 to +50 degrees)