



Towards a space magnetometer based on solid state technology

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Technological developments in the field of solid state magnetic sensors are resulting in designs featuring continuously improving performance. These devices have some inherent advantages over more commonly used space magnetometers featuring Flux-gate or Optically Pumped sensors, especially from a mass and power consumption perspective. We compare the performance of a state of the art fluxgate Magnetometer, similar to that currently operating in-flight on-board the CNSA-ESA Double Star spacecraft, with an implementation of a closed loop ceramic Anisotropic Magneto-Resistance magnetometer design. We assess the design in terms of resolution, noise and offset stability as a function of temperature and discuss the outlook for applications of solid state instrumentation in future missions composing of nano-sats and/or planetary landers.