

# Inverse problem in paleomagnetism: Making the most of the measured data

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The process of extraction of relict magnetic information from georocks and meteorites is a challenging task. Due to the weak intensity of the field produced by the remanent magnetisation of a rock, the measurements have to be performed in direct vicinity of the sample and using highly sensitive magnetometric devices such as SQUID and QDM. The basic quantity of interest is the net magnetisation (magnetisation moment vector). Reconstruction of this quantity hinges on effective processing of the experimental data, with the main challenges being the limited measurement area and the noise contamination. Motivated by the concrete experimental settings, I will focus on constructive issues related to asymptotic analysis, field extrapolation and denoising. I will discuss some computational strategies and illustrate the results numerically.