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**Elodie Pozzi\*** ([elodie.pozzi@slu.edu](mailto:elodie.pozzi@slu.edu)), 221 N. Grand Blvd, St Louis, MO 63103. *A 2 dimensional inverse problem in magnetism.*

Inverse problems have known a recent development in many fields like signal processing, medical imaging and more recently paleomagnetism. Broadly speaking, an inverse problem consists in reconstructing from a set of measurements the original source. We consider a 2D inverse problem in magnetism to estimate the net moment represented by the mean value of a function supported on an interval  $K$  of the real line from the partial knowledge of the magnetism on an another interval  $S$  located on the parallel line to  $K$  at height  $h > 0$ . We will see how this question can be rephrased using complex analysis, harmonic analysis and operator theory. To estimate the mean value, we will construct and solve a constrained approximation problem. This talk is based on a joint work with Juliette Leblond, INRIA, France. (Received January 27, 2019)