1154-47-1229   **Elodie Pozzi***, Saint Louis University, 220 N Grand Blvd, Saint Louis, MO 63122. *A two-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 two dimensional 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. 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 September 14, 2019)