

Title: Multidimensional Contours à la Fröhlich-Spencer for Long-Range Ising Models

Abstract: We present a definition of contour for \mathbb{Z}^d with $d \geq 2$, which is suitable for studying long-range Ising models at low temperatures. The objects are inspired by the unidimensional contours defined by J. Fröhlich and T. Spencer in dimension one. The applications include proofs of the phase transition for classes of long-range ferromagnetic Ising models, including models with decaying and random fields, analyticity of the pressure, and decay of correlations. Based on joint works with several authors, in particular, on results of two Ph.D. theses defended recently in our group in São Paulo by Lucas Affonso (USP, Brazil) and João Maia (USP, Brazil/BICMR, China).