

# Phase Transitions in Ferromagnetic Ising Models with Magnetic Fields

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## **Resumo/Abstract:**

We study the nearest neighbor Ising model with ferromagnetic interactions in the presence of a space dependent magnetic field of type  $1/|x|^\alpha$ . We prove that in dimensions  $d \geq 2$  for all  $\beta$  large enough if  $\alpha > 1$  there is a phase transition while if  $\alpha < 1$  there is a unique DLR state. Jointly with Marzio Cassandro (GSSI, L'Aquila), Errico Presutti (GSSI, L'Aquila) and Leandro Cioletti (Unb, Brazil).