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Dobrushin interfaces in long-range models

In this talk we want to discuss possible existence of so-called interface states (or Dobrushin states) for long-range Ising models in dimension $d=2$. Dobrushin states are extremal infinite-volume Gibbs measures selected by mixed \pm -boundary conditions originally described for the standard (nearest-neighbour) Ising model in dimension three. Depending on the question one asks, a long-range interaction can behave similarly or not to nearest-neighbour models. We will discuss some recent results obtained in this perspective and pose some open questions in the end.

The results presented are obtained in joint collaboration with Loren Coquille (U Grenoble), Aernout van Enter (U Groningen) and Arnaud Le Ny (U Paris Creteil).