Realistic Convection in a Rotating Binary Ferrofluid

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In this work we report theoretical and numerical results on the convection for a binary magnetic mixture under rotation. We focus in the stationary convection for realistic boundary conditions (no-slip). We compare our results with a previous analysis using analytical calculations (with simplified boundary conditions) [1]. We analyze the stabilising effect of the rotation on the instability thresholds for aqueous suspensions of magnetic mixtures.

[1] D. Laroze, J. Martínez-Mardones, J. Bragard, P. Vargas, "Convection in a rotating binary ferrofluid", Physica A, in press, 2006.