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Interacting particle systems on random graphs

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Abstract. The present overview of interacting particle systems on random graphs collects the notes of a mini-course given by the authors at the Brazilian School of Probability, 5–9 August 2024, in Salvador, Bahia, Brazil. The content is a personal snapshot of an interesting area of research at the interface between probability theory, combinatorics, statistical physics and network science that is developing rapidly.

Keywords. Interacting particle systems, stochastic Ising model, voter model, contact process, sparse and dense random graphs, space-time scaling, phase transitions.

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