1035-82-2026   **Andrea Montanari*** (`montanari@stanford.edu`), Stanford University. *Statistical mechanics on sparse random graphs.*

We consider models (stochastic processes) over discrete random variables indexed by the vertices of a sparse random graph. Examples of such systems arise in random combinatorics (coloring), physics (diluted spin glasses) and computer science (random satisfiability). Over the last ten years, heuristic techniques from theoretical physics have lead to a number of sharp conjectures concerning such systems. We present some recent progresses towards a rigorization of these results. [based on joint works with A. Dembo and A. Gerschenfeld] (Received September 21 2007)