



THE WEIZMANN INSTITUTE OF SCIENCE  
FACULTY OF MATHEMATICS AND COMPUTER SCIENCE  
Geometric Functional Analysis and Probability Seminar

Room 290C ,Ziskind Building  
on Thursday, Mar 08, 2018  
at 13:30

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On the high temperature phase in mean-field spin glasses

Abstract:

We present a new way to derive the replica symmetric solution for the free energy in mean-field spin glasses. Only the Sherrington-Kirpatrick case has been worked out in details, but the method also works in other cases, for instance for the perceptron (work in progress), and probably also for the Hopfield net. The method is closely related to the TAP equations (for Thouless-Anderson-Palmer). It does not give any new results, presently, but it gives a new viewpoint, and it looks to be quite promising. As the TAP equations are widely discussed in the physics literature, also at low temperature, it is hoped that the method could be extended to this case, too. But this is open, and probably very difficult.