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# The Metastate interpretation of replica symmetry breaking in short range Ising spin glasses

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The mean field analysis of Ising spin glasses shows that at low temperature, these system display a non ergodic phase characterized by an exponential number of metastable states which is captured by the so called replica symmetry breaking (RSB) solution of the models.

However when this mean field theory picture is applied to finite dimensional systems, it runs into troubles. In these lectures a way out to this conundrum will be discussed through the introduction of the concept of metastate, a probability measure over infinite-size Gibbs states in a given disorder realization, in conjunction with a non-standard interpretation of the RSB results.

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