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TAP variational principle for the constrained overlap multiple SSK model

Wednesday 28 September 2022 11:00 (20 minutes)

Spin glass models involving multiple replicas with constrained overlaps have been studied by (among others) Franz, Parisi, Talagrand, Panchenko and Ko. The latter three authors have shown that the limiting free energy is given by a Parisi type minimization. In this talk we will discuss how for the spherical Sherrington-Kirkpatrick (SSK, i.e. 2-spin) model it can also be expressed in terms of a TAP variational principle. The derived variational formula confirms that this model is replica symmetric, a fact which is natural but not obvious from the Parisi formula for the model.

Joint work with David Belius and Justin Ko.

Presenter: FRÖBER, Leon (University of Basel)