1125-60-938   **Subhabrata Sen*** (`ssen90@stanford.edu`), 390 Serra Mall, Sequoia Hall Rm 229, Stanford, CA 94305. *Optimization on Sparse Random Graphs and its Applications.*

Many optimization problems on sparse random (hyper)graphs are currently intractable to analysis by purely combinatorial techniques. Statistical Physicists predict that the analysis often "simplifies" considerably in the "large degree" limit. In this talk, we will see how to make this idea rigorous by analyzing certain graph cut problems and random constraint satisfaction problems. Our techniques lead to connections between combinatorial problems on sparse random graphs and the study of spin glasses and random matrices. Parts of this talk will be based on joint work with Amir Dembo and Andrea Montanari. (Received September 13, 2016)