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Sheridan Road, Evanston, IL. *The Parisi measure.*

Spin glasses are magnetic systems exhibiting both quenched disorder and frustration, and have often been cited as examples of "complex systems." As mathematical objects, they provide several fascinating structures and conjectures. This talk will cover recent progress that shed more light in the mysterious and beautiful solution proposed 30 years ago by G. Parisi. We will focus on properties of the functional order parameter of the famous Sherrington-Kirkpatrick model and we will explain a proof of uniqueness of the Parisi functional. Based on joint works with Wei-Kuo Chen. (Received January 19, 2015)