1143-60-513 **Jinho Baik**, **Ji Oon Lee** and **Hao Wu*** (lingluan@umich.edu), Office 4072, 530 Church St, Ann Arbor, MI 48109. *Ferromagnetic to paramagnetic transition in spherical spin glass.*

We consider the spherical spin glass model defined by a combination of the pure 2-spin spherical Sherrington-Kirkpatrick Hamiltonian and the ferromagnetic Curie-Weiss Hamiltonian. In the large system limit, there is a two-dimensional phase diagram with respect to the temperature and the coupling strength. The phase diagram is divided into three regimes; ferromagnetic, paramagnetic, and spin glass regimes. The fluctuations of the free energy are known in each regime. In this talk, we will focus on the transition between the ferromagnetic regime and the paramagnetic regime in a critical scale. It turns out that the fluctuations of the free energy in this transition regime are governed by the joint distribution of the linear statistics and the largest eigenvalue of the disorder. (Received August 21, 2018)