

We present the recent progress on the quantitative propagation of chaos for large systems of interacting particles with singular forces based on in particular the method of relative entropy. Furthermore, by carefully using the uniform bound for the relative entropy between the joint distribution of the particle system and the limit law, now we are able to obtain the gaussian fluctuations around the mean-field equation for systems with possibly singular interactions. Based on joint works with D. Bresch, P.-E. Jabin, Rongchan Zhu and Xianliang Zhao.