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Changfeng Gui and **Amir Moradifam*** (amirm@ucr.edu). *Uniqueness of solutions of mean field equations.*

I will talk about the uniqueness of solutions of mean field equations in two dimensions in the critical and subcritical total mass regime, and present some symmetry results for mean field equations on R^2 , flat tori, and annuli. The proofs are based on the Sphere Covering Inequality. This is a joint work with Changdenf Gui. (Received March 21, 2017)