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E. Bayraktar, A. Cecchin, A. Cohen and F. Delarue* (delarue@unice.fr). *Restoration of uniqueness for mean field games on a finite state space with a common noise.*

We here discuss how a common noise may help for restoring uniqueness to mean field games on a finite state space. The key point is to address the unique solvability of the corresponding master equation on the finite dimensional simplex and to invoke earlier results on the smoothing properties of diffusions with values in manifolds with corners. Interestingly enough, our result opens the door to selection principles for standard mean field games on a finite state space without uniqueness. This question is addressed in a companion talk by A. Cecchin in the framework of potential games.

This is a joint work with E. Bayraktar, A. Cecchin and A. Cohen (Received September 15, 2019)