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Mean field social optimization: person-by-person optimality and master equations

We consider a large population optimal control problem and apply dynamic programming from the point of view of a representative agent, instead of directly treating a continuum of agents. This leads to a special HJB equation, called the master equation, for the value function of an agent. For performance analysis, we employ a two-scale master equation system to prove person-by-person optimality.

Joint work with

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