What is the optimal way to lie? From microscopic to kinetic descriptions of consensus control

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In this talk, I will discuss models in opinion dynamics when one (or more) agents has the ability to lie to the classical system in order to persuade the population towards consensus at their goal opinion. We analyse this as an optimal control problem for how best to lie to a population in order to guarantee the consensus that the liar desires. We consider a range of control regularisations, each motivated by some social convention, such as the liar wanting to present an opinion close to their true opinion. For each regularisation, we demonstrate the effect of instantaneous controls. Furthermore, we introduce a Boltzmann-type description for the corresponding kinetic system and present analysis and numerical results for the resulting Boltzmann and Fokker-Planck equations.