Abstract Submitted
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Opinion Formation and Consensus Engineering in Empirical Social Networks[1] QIMING LU, GYORGY KORNISS, BOLESLAW SZYMANSKI, RPI — We study the evolution, formation, and destabilization of opinion clusters in empirical social networks. To that end, we employ the Naming Game[2] [3], a stylized agent-based model, capturing essential features of agreement dynamics and opinion spreading in social networks. Here[4], we focus on on the impact that communities in the underlying social graphs can have on the outcome of the agreement process. We find that networks with strong community structure hinder the system from reaching global agreement; the late-stage behavior of the Naming Game in these networks exhibits clusters of long-living (or metastable) coexisting opinions. We then investigate various methods to destabilize coexisting metastable opinion clusters (in order to reach global consensus), such as node removal or selecting a small-number of well-positioned "committed" agents who will stick to a preferred opinion without deviation.

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[2]Baronchelli et al., J. Stat. Mech.: Theory Exp. P06014 (2006).
[3]Dall'Asta et al., Phys. Rev. E **74**, 036105 (2006).
[4]Q. Lu, G. Korniss, and B.K. Szymanski, J. Econ. Interact. Coord. **4**, 221 (2009).

Gyorgy Korniss
RPI

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