

D2D Mode Selection: An Information Theoretic Perspective

- ▶ System Model: Single cell with 2 Tx-Rx pairs, simplex communication¹
- ▶ Possible modes of operation:
 1. Conventional cellular mode
 2. MAC-BC cellular mode
 3. Dedicated D2D mode
 4. Mixed cellular-D2D mode
- ▶ Goals:
 1. Characterize achievable rates under different modes
 2. Propose and analyze algorithms for mode selection
 3. Handoff from D2D mode to cellular mode and vice versa
 4. Extend to K user pairs, account for inter-cell interference, etc . . .

¹Joint work with Ribhu, Kausik Koneripalli, and Vinnu Bhardwaj