# Capacity Bound for Uncoordinated Transmissions on Multi-way Relay Networks

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**Abstract:**

In this paper we propose an uncoordinated transmissions scheme in multi-way relay networks and define its capacity in high signal-to-noise power ratio (SNR) region. We adopt the concept of coded slotted ALOHA (CSA) to overcome the interference problem. To improve the threshold of the offered traffic, we employ iterative demapping algorithm that can decode multi-packet simultaneously. From the capacity bound of the proposed networks which is higher than CSA, we conjecture that the proposed system can achieve a reliable communication with throughput more than 1 packet/slot. Extrinsic information transfer (EXIT) chart analysis is shown to confirm the conjecture.