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Project title: Performance Comparison between buffer-state based and CSI based relay selection

Proposed work: This project will implement three buffer-aided relay selection schemes, including one based on buffer-state, one based on channel state information (CSI), and another based on both buffer-state and CSI. Both outage probability and average delay will be evaluated using simulations. The performance comparison among these three schemes will be useful to understand either buffer state or CSI, or both dominate the performance of buffer-aided relay selection. The reference is listed below.

Reference

[1] P. Xu, G. Chen, Z. Yang, and H. Lei, "Buffer-state-based probabilistic relay selection for cooperative networks with delay constraints," *IEEE Wireless Communications Letters*, vol. 9, no. 11, pp. 1855–1859, Nov. 2020.

[2] A. Ikhlef, D. Michalopoulos, and R. Schober, "Max-max relay selection for relays with buffers," *IEEE Trans. Wireless Commun.*, vol. 11, no. 3, pp. 1124–1135, Mar. 2012.