1163-05-1562   **Sinan Aksoy**, **Jackson Earl**, **Emily Heath*** (`eheath3@illinois.edu`), **Cliff Joslyn**, **Terran Mott**, **Brenda Praggastis** and **Emilie Purvine**. *Low-Order Approximations of Hypergraphs.* Preliminary report.

While researchers have long used graphs to model networks, hypergraphs allow edges containing any number of nodes and hence can serve as more natural and effective models for complex data with multiway relations. Given the many ways to represent the same data with different graphs and hypergraphs, it is important to consider how the models we use affect our analysis. How can we manage the tradeoffs which arise from reducing hypergraph models to simpler, but smaller, graph models? In order to understand the loss of information that accompanies one such simplification of a hypergraph to a graph, we explore the set of hypergraphs with the same line graph, which records qualitative information about overlapping hyperedges. (Received September 15, 2020)