1128-00-246   **Jason Portenoy*** (`jporteno@uw.edu`) and **Jevin D West** (`jevinw@uw.edu`). *The InfoMap Community Detection Algorithm: Techniques for Scaling to Very Large Networks.* Preliminary report.

Infomap is a community detection algorithm that uses compression of random walks to surface patterns and structure on a network. Using network dynamics, it is capable of partitioning graphs into the optimal number of hierarchically nested modules. Infomap has become widely adopted, finding use in industry settings and research labs around the world. While we have been able to scale this algorithm to large networks on the order of tens of millions of nodes, we have recently reached an upper limit when attempting to cluster the citation graph from Web of Science, which contains 219,963,473 nodes and 1,034,566,885 edges. We present our current progress in attempting to scale our algorithm, including making use of supercomputing clusters at the Pacific Northwest National Laboratory, and a parallelized version of the algorithm (GossipMap). (Received February 27, 2017)

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