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Jessalyn Bolkema* (jbolkema@hmc.edu), **Katherine Benson**, **Katie Haymaker**, **Christine A. Kelley**, **Sandra Kingan**, **Gretchen Matthews** and **Esmeralda Natase**. *Graph-theoretic characterization of recovery failure in compressed sensing*. Preliminary report.

In compressed sensing, the Interval Passing Algorithm (IPA) is an iterative signal recovery algorithm that operates on a graph representation of a sparse measurement matrix. There exist graph-theoretic structures called *termatiko sets* that characterize IPA failure. We study measurement matrices arising from finite geometries and classify *termatiko sets* in this context. We also present a bound on the minimum size of a *termatiko set* and suggest constructions to avoid or eliminate these algorithmically harmful structures. (Received September 03, 2019)