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Isaac Z Pesenson* (pesenson@temple.edu). *Sampling in Paley-Wiener spaces on combinatorial graphs.*

A notion of Paley-Wiener spaces is introduced on combinatorial graphs. It is shown that functions from some of these spaces are uniquely determined by their values on some sets of vertices which are called the uniqueness sets. Such uniqueness sets are described in terms of Poincare-Wirtinger-type inequalities. A reconstruction algorithm of Paley-Wiener functions from uniqueness sets which uses the idea of frames in Hilbert spaces is developed. (Received January 20, 2008)