

# Perfect reconstruction of a function defined on graphs by graph wavelets

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## ABSTRACT

Several ways of constructing wavelets on graphs have been proposed depending on applications that the resulting wavelets are applied to. Among them, Hammond *et al.* introduced the graph wavelet frames via spectral graph theory with which useful properties of classical wavelets remain true. In this talk we give a brief introduction to graph wavelets, and then address the problem of reconstructing a function defined on a graph by using the graph wavelet frames. It is shown that under certain conditions the graph wavelet frames become tight so that applying frame operator to the function yields a perfect reconstruction formula. General reconstruction formula by using a dual frame, but not just by using the canonical one, is also given.