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Towards a Spectral Theory of Cellular Sheaves.

Spectral graph theory — the examination of spectral properties of the graph Laplacian — is an important tool in data analysis and other applications. By interpreting the graph Laplacian as the Hodge Laplacian of a constant sheaf, one is naturally led to the consideration of nontrivial sheaves over higher-dimensional cell complexes. This talk will trace out the first sketches of such a theory of spectral sheaves with potential applications. (Received September 24, 2018)