

On the spectral characterization of signed graphs

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Abstract

For more than twenty years a major part of my research was devoted to the question: “which graphs are determined by their spectrum”. More recently I considered the generalization of this question to signed graphs and looked for signed graphs which are determined by their spectrum, up to switching.

One of the approaches is to determine the class of all (signed) graphs with a certain spectral property and then find out which ones in that class have the same spectrum. In this talk we report on the classification of signed graphs with at most two eigenvalues unequal to 1 or -1 , and find out which ones in this class are determined, up to switching, by the spectrum.

Joint work with Hatice Topcu.