

A SPECTRAL MOORE PROBLEM

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In 2018, Richey, Stover, and Shutty posed a spectral version of the Moore problem for regular graphs. Given an integer $k \geq 3$ and $\theta < 2\sqrt{k-1}$, they asked: What is the maximum order of a k -regular graph whose second largest eigenvalue is at most θ ? In this talk, I will discuss some interesting cases of this problem and present recent progress we have made towards it. This presentation is based on joint work with Cioaba, Nozaki, and Xiang.