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Interrogating length spectra and quantifying isospectral finiteness

Associated to a closed hyperbolic surface is its length spectrum, the set of the lengths of all of its closed geodesics. Two surfaces are said to be isospectral if they share the same length spectrum. There are different methods to produce surfaces that are isospectral but not isometric, the most successful one based on a technique introduced by Sunada.

The talk will be about the following questions and how they relate: - How many questions do you need to ask a length spectrum to determine it? - Among all surfaces of given genus, how many can be isospectral but not isometric?

The approach to these questions will include finding adapted coordinate sets for moduli spaces and exploring McShane type identities.