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Spectral properties of spherical conical metrics

This talk will focus on the recent works on the spectral properties of constant curvature metrics with conical singularities on surfaces. The motivation comes from earlier works joint with Rafe Mazzeo on the study of deformation of such spherical metrics with large cone angles, which suggests that there is a deep connection between the geometric properties of the moduli space and the analytical properties of the associated singular Laplace operator. In this talk I will talk about a joint work with Bin Xu on spectral characterization of the monodromy of such metrics, and work in progress with Mikhail Karpukhin on the relation of spectral properties with harmonic maps.