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Title: Transfer operators for Riemann surfaces of finite and infinite area with cuspidal ends

Hecke triangle groups form a one-parameter family of Fuchsian groups. This family starts with the modular group PSL(2,Z) which has one cusp and two elliptic points, one of which is of order 2, the other one is of order 3. By iteratively increasing the order of the second elliptic point, this point is slowly pulled to infinity until it turns into a second cusp. Then this cusp is opened to form a funnel of increasing width.
We will use this family to discuss parallel "slow" and "fast" discretizations for the geodesic flows on the Hecke triangle surfaces as well as the billiard flows on the underlying triangle surfaces. We will see that the fast discretizations serve for thermodynamic formalism approaches to dynamical zeta functions. The transfer operators arising from the slow discretizations however allow (classical dynamical) characterizations of Laplace eigenfunctions in the finite area case. Moreover, these results lead to natural conjectures on resonances and vector-valued automorphic forms.