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*Pseudospectra in automorphic scattering*

We study surfaces with (hyperbolic) cusp ends. The generator,  $B$ , of the Lax-Phillips semigroup has spectrum given in terms of the eigenvalues of the Laplacian and the poles of the scattering matrix. We show that away from the continuous spectrum of the Laplacian, the norm of the resolvent of  $B + 1/2$  is comparable (in the non-physical plane) to the norm of the scattering matrix. In particular, for the modular surface this means that the norm of the resolvent of  $B + 1/2$  is comparable to  $|\zeta(2s)|^{-1}$  when  $0 < \epsilon \leq \Re s \leq 1/2 - \epsilon$ . This is joint work with M. Zworski.