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**Statistical Model of Wave Transport in Systems with Coexisting Chaotic and Regular Phase Space**

**Regions.**

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We study the statistics of the input-output properties of wave systems in which ray trajectories that are regular and chaotic coexist (i.e., ‘mixed systems’). The transport is expressed as a summation over eigenmodes (energy states) where the eigenmodes can typically be classified as either regular or chaotic.. By appropriate characterization of regular and chaotic contributions, we obtain predictions for the transport as characterized by impedance or scattering matrices. We test these predictions by comparison with numerical calculations for a specific example. [Collaborators: M.-J. Lee, T.M. Antonsen, and K. Ma]