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Title: Universality formulae for resonant scattering by open periodic waveguides

Abstract: A mathematical mechanism for resonant scattering behavior by open periodic waveguides is the dissolution of an embedded eigenvalue into the continuous spectrum. This corresponds to the destruction of a guided mode of the waveguide, upon perturbation of the wavevector or the material properties or the geometry of the waveguide structure. Analytic perturbation of functions that unify the guided modes and the extended scattering states gives rise to asymptotic formulae for transmission anomalies. The geometry and the material properties of the structure enter the formulae only through a small number of free parameters. This is joint work with Stephen Shipman, LSU.