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Review text:

An exciting completion of papers [16] and [17], centered around the new closed-form representations (15) and (19) of the transmission and reflection amplitudes in terms of modified Bessel functions. These describe, in principle, the non-unitary quantum scattering in complex potential $\exp ix$ and/or in its perturbations, but the emphasis is fully transferred here to the experimentally productive use of the underlying concept of the loss-gain symmetry in classical optics. While working with a complex refractive index and studying, typically, the unidirectional invisibility phenomena it is shown that the related right-incidence enhancement arises through an increase in the pulse length in the wave-packet scenario. Further highlights of the text involve the rigorous confirmation that although the invisibility itself is not quite exact, the modified form of the unitarity (cf. ref. [18]) is strict and exact, indeed.