

Remarks on Inverse Resonance Problem on the Line Missing Bound States Information

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November 2, 2020

Abstract

We consider the inverse resonance problem in scattering theory in one dimension. The signal is in form of Fourier transform, which has various sorts of representation theorem via its zero set. We are interested at the question if certain bound states information are disregarded, then how much more information on the potential V is needed to recover the potential? If partial knowledge of the potential function is given, certain amount of zeros or bound states can be removed to locally recover a representation theorem of the Fourier transform. Once the representation form is recovered, we compare to conclude the inverse uniqueness.

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