

The Temporal-Coherence Gain of Superlens Image with Quasi-Monochromatic Source

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From numerical experiments, a dramatic observation of temporal-coherence gain of the image field is made for the negative-index superlens with a random quasi-monochromatic source, even when there is almost no reflection and no frequency filtering effects. A single-parameter theory which can explain the phenomenon quantitatively is constructed based on the physical picture that signals propagating through the NIM on different paths have a different retardation time. The theoretical results agree excellently with the numerical ones.

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