Abstract Submitted
for the MAR12 Meeting of
The American Physical Society

Position-dependent Diffusion Coefficient as Localization Criterion in Non-Conservative Random Media BEN PAYNE, ALEXEY YAMILOV, Missouri University of Science and Technology — Characterization of different regimes of electromagnetic wave transport in random media is an important area of research with ramifications in condensed matter physics. For passive systems, transport can be either ballistic, diffusive, or localized. Wave corrections to otherwise classical transport in a finite random media result in position-dependent diffusion coefficient $D(z)$. If media is active or dissipative (contains optical gain or absorption), then $D(z)$ can be used to distinguish a multitude of distinct wave transport regimes. Using a numerical model, we validate the existence of the position-dependent diffusion, including for media with absorption. We have previously developed a phase space enumerating all regimes exhibiting distinct transport behavior. Here we present recent results from our numerical simulations which demonstrate the ability to use $D(z)$ to distinguish between these regimes.

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Date submitted: 11 Nov 2011 Electronic form version 1.4