



Experimental phase-space-based optical amplification of scar modes

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(Submitted on 6 Apr 2012)

Waves billiard which are chaotic in the geometrical limit are known to support non-generic spatially localized modes called scar modes. The interaction of the scar modes with gain has been recently investigated in optics in micro-cavity lasers and vertically-cavity surface-emitting lasers. Exploiting the localization properties of scar modes in their wave analogous phase space representation, we report experimental results of scar modes selection by gain in a doped D-shaped optical fiber.

Subjects: **Optics (physics.optics)**

Cite as: [arXiv:1204.1476](#) [physics.optics]

(or [arXiv:1204.1476v1](#) [physics.optics] for this version)

Submission history

From: [Valerie Doya](#) [[view email](#)]

[v1] Fri, 6 Apr 2012 13:56:13 GMT (1907kb)

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