Cornell University Library

We gratefully acknowledge supp
the Simons Fo
and member ins

arXiv.org > quant-ph > arXiv:1107.4256

Search or Article-id

(Help | Advance

All papers

Quantum Physics

PT symmetry and spontaneous symmetry breaking in a microwave billiard

S. Bittner, B. Dietz, U. Guenther, H. L. Harney, M. Miski-Oglu, A. Richter, F. Schaefer

(Submitted on 21 Jul 2011 (v1), last revised 2 Dec 2011 (this version, v3))

We demonstrate the presence of parity-time (PT) symmetry for the non-Hermitian two-state Hamiltonian of a dissipative microwave billiard in the vicinity of an exceptional point (EP). The shape of the billiard depends on two parameters. The Hamiltonian is determined from the measured resonance spectrum on a fine grid in the parameter plane. After applying a purely imaginary diagonal shift to the Hamiltonian, its eigenvalues are either real or complex conjugate on a curve, which passes through the EP. An appropriate basis choice reveals its PT symmetry. Spontaneous symmetry breaking occurs at the EP.

Submission history

From: Barbara Dietz [view email]
[v1] Thu, 21 Jul 2011 12:47:58 GMT (217kb)
[v2] Tue, 4 Oct 2011 11:34:08 GMT (305kb)
[v3] Fri, 2 Dec 2011 15:11:52 GMT (305kb)

Which authors of this paper are endorsers?

Link back to: arXiv, form interface, contact.

Download:

- PDF
- PostScript
- Other formats

Current browse cont

quant-ph
< prev | next >
new | recent | 1107

Change to browse b

math
math-ph

References & Citatio

- INSPIRE HEP
  (refers to | cited by)
- NASA ADS

Bookmark(what is this?)

ScienceWISE