



A Blaschke-type condition for analytic functions on finitely connected domains. Applications to complex perturbations of a finite-band selfadjoint operator

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(Submitted on 4 Jun 2011)

This is a sequel of a recent article by Borichev-Golinskii-Kupin, where the authors obtain Blaschke-type conditions for special classes of analytic functions in the unit disk which satisfy certain growth hypotheses. These results were applied to get Lieb-Thirring inequalities for complex compact perturbations of a selfadjoint operator with a simply connected resolvent set. The first result of the present paper is an appropriate local version of the Blaschke-type condition from Borichev-Golinskii-Kupin. We apply it to obtain a similar condition for an analytic function in a finitely connected domain of a special type. Such condition is by and large the same as a Lieb-Thirring type inequality for complex compact perturbations of a selfadjoint operator with a finite-band spectrum. A particular case of this result is the Lieb-Thirring inequality for a selfadjoint perturbation of the Schatten class of a periodic (or a finite-band) Jacobi matrix. The latter result seems to be new in such generality even in this framework.

Comments: 11 pages, 2 figures; a preliminary version

Subjects: **Spectral Theory (math.SP)**; Mathematical Physics (math-ph); Complex Variables (math.CV)

MSC classes: Primary: 30C15, Secondary: 47B36

Cite as: [arXiv:1106.0864](#) [math.SP]
(or [arXiv:1106.0864v1](#) [math.SP] for this version)

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[v1] Sat, 4 Jun 2011 23:44:07 GMT (124kb,D)

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