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L^2 -restriction bounds for eigenfunctions along curves in the quantum completely integrable case

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Abstract

We show that for a quantum completely integrable system in two dimensions, the L^2 -normalized joint eigenfunctions of the commuting semiclassical pseudodifferential operators satisfy restriction bounds of the form $\int_{\gamma} |\phi_j^h|^2 ds = \mathcal{O}(|\log \hbar|)$ for *generic* curves γ on the surface. We also prove that the maximal restriction bounds of Burq-Gerard-Tzvetkov [?] are always attained for certain exceptional subsequences of eigenfunctions.