



SHARPNESS IN TWO-SIDED ESTIMATES FOR HILL OPERATORS

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Consider the Schrödinger operator $Hy = -y'' + q'y$ on $L^2(\mathbb{R})$ with a distribution q' , where $q \in L^2(0, 1)$ is a 1-periodic function. The spectrum of H is purely absolutely continuous and consists of intervals separated by gaps. Recently, the inverse problem (including characterization) in terms of vertical slits (the Marchenko-Ostrovski mapping) on the quasimomentum domain was solved. Furthermore, a priori two-sided estimates for these maps were obtained. Now we prove sharpness in these two-sided estimates. A similar result is obtained for the periodic Zakharov-Shabat systems.