

UPPER BOUND FOR THE BETHE-SOMMERFELD  
THRESHOLD IN TWO-DIMENSIONS

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We give an upper bound for the Bethe-Sommerfeld threshold (the minimal energy above which no spectral gaps occur) for the periodic Schrödinger operator on the Euclidean plane, provided that the potential is locally square-integrable and the  $L^2$ -norm on the fundamental cell is small. We also give an application of the result to the spectral theory of random Schrödinger operators. This work is a joint work with Masahiro Kaminaga.