

# A toy model for dislocations in crystals

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## **Abstract**

In the so-called tight binding approximation, crystals are modeled by discrete Schrödinger operators. These operators constitute a particular class of Jacobi operators. Dislocations in a crystal amount to changes in the behaviour of the sequences defining the corresponding Jacobi operator. In this talk, we use Jacobi operators defined by a single sequence to show how the spectral properties of the operator depend on the distribution of dislocations. Several advanced techniques of spectral analysis by asymptotic methods are presented.

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