

## Hilbert transform on Bianchi groups

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In this talk, we explore a class of geometrically induced Fourier multipliers on lattices in  $SL_2(\mathbb{C})$ . These operators generalize the classical Hilbert transform, and their  $L^p$ -boundedness for  $1 < p < \infty$  has traditionally been proved using Cotlar identities. We introduce a more geometric approach to establishing these identities, which not only simplifies the existing results on  $SL_2(\mathbb{Z})$  but also extends them to a whole family of lattices in  $SL_2(\mathbb{C})$  known as Bianchi groups.