ICM 1998, Berlin, Aug. 18–27

Abstracts of Short Communications and Posters

Section:

8. Analysis

1991 MS Classification: 46, 47, 58
Gruber, Michael, Humboldt-Universität zu Berlin, Deutschland
Non-commutative Bloch theory
For differential operators which are invariant under the action of an abelian group Bloch theory is the tool of choice to analyze spectral properties. By shedding some new non-commutative light on this we motivate the introduction of a non-commutative Bloch theory for elliptic operators on Hilbert C^*-modules. It relates properties of C^*-algebras to spectral properties of module operators such as band structure, weak genericity of cantor spectra, and absence of discrete spectrum. It applies e. g. to differential operators invariant under a projective group action, such as Schrödinger operators with periodic magnetic field.