

## **Toeplitz operators in the spectral and scattering theory of magnetic quantum Hamiltonians**

GEORGI RAIKOV

Universidad de Chile, Santiago

I will consider a class of compact Toeplitz operators acting in spaces of Fock-Bargmann-Segal type, and will discuss the asymptotic behaviour of their spectrum. Some of these results are obtained in collaboration with Simone Warzel (Erlangen/Princeton). Moreover, I will speak of the role of the Toeplitz operators in the spectral and scattering theory of some magnetic quantum Hamiltonians like the Schrödinger and the Pauli operators. In particular, I will present some recent results on the singularities of the spectral shift function, and the accumulation of resonances near the Landau levels for the three-dimensional Schrödinger operator with constant magnetic fields and short-range electric potentials. These results are obtained in collaboration with Jean-François Bony (Bordeaux), Vincent Bruneau (Bordeaux), and Claudio Fernández (Santiago).