

Jean-Bernard Bru (Universidad del País Vasco and Basque Center for Applied Mathematics - BCAM):

Semigroup Theory in Quantum Mechanics

Descripción: It will be a streamlined and systematic introduction to strongly continuous semigroups of bounded linear operators on Banach spaces, as it is explained in [1]. Indeed, this theory provides a very efficient tool for the study of linear evolution equations arising as partial differential equations, functional differential equations, stochastic differential equations, and others. We will discuss the special case of Quantum Mechanics where autonomous evolution equations are given by strongly continuous semigroups. We will explain, in particular, the so-called Schrödinger and Heisenberg pictures of Quantum Mechanics. See [2].

References

- [1] K.-J. Engel and R. Nagel, A Short Course on Operator Semigroups, Universitext, Springer-Verlag New York, 2006
- [2] J.-B. Bru and W. de Siqueira Pedra, Lieb-Robinson Bounds for Multi-Commutators and Applications to Response Theory, SpringerBriefs in Mathematical Physics **13** (2017) 1-110.