Summer School 2026

Topics in Banach Space Theory

A Loomis–Sikorski Viewpoint for Banach Lattices

Name	Javier Laguna Ricart
University	Universidad de Murcia
Day and time	Thursday: 16:40–17:00

Abstract

The Loomis–Sikorski Representation Theorem is a classical result saying that every σ-complete Boolean algebra can be represented as a quotient of a concrete σ-algebra of sets by a σ-ideal. In this way, abstract countable order operations can be studied through concrete set-theoretic representatives, up to a natural notion of negligible sets. In this talk, we will recall this theorem and discuss its general philosophy: representing abstract ordered structures as quotients of more concrete function-like objects. We will then explain a simple analogue in the setting of Banach lattices, where the order structure interacts with the norm. The aim is to highlight what carries over from the Loomis–Sikorski picture, what changes in the Banach lattice setting, and how familiar properties naturally appear when one asks about the faithfulness of the resulting representation.