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Geometric Quantization: Old and New

Geometric Quantization, introduced in the late 1960s by Kostant and Souriau, unifies ideas from quantum mechanics with the “orbit method” from representation theory. While many parts of the theory are well-developed, some of the deep, old mysteries of the subject (such as “independence of polarization” phenomena) are still unresolved, and there are exciting new connections to other areas of mathematics (of which mirror symmetry is one example). The purpose of this minicourse is to introduce participants to classical geometric quantization, and provide preparation for the session “Geometric quantization: old and new.”