

Examination topics 2025/26
Introduction to quantization
Jan Dereziński

1. Integral kernel of an operator.
2. x, p quantization.
3. Weyl quantization.
4. The Baker-Cambell-Hausdorff formula, and the Weyl quantization in terms of Weyl operators.
5. The parity operator and its relationship to Weyl quantization.
6. Coherent states and the FBI transformation.
7. Covariant and contravariant quantization
8. Wick and anti-Wick quantization.
9. Bogoliubov implementers and the metaplectic group in the Schrödinger representation
10. Bogoliubov implementers and the metaplectic group in the Fock representation
11. Calderon-Vaillancourt Theorem and the Beals criterion.
12. Semiclassical asymptotics of the functional calculus.
13. Semiclassical asymptotics of the dynamics and the Egorov Theorem.
14. Sharp Gaarding inequality and Fefferman-Phong inequality.
15. Weyl asymptotics of the number of eigenvalues of Schrödinger operators.