Microlocal sheaf theory with applications to symplectic topology

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Recently, D. Tamarkin in [Ta08] used the microlocal theory of sheaves to give a totally new proof of the fact that the zero-section of a compact manifold always self-intersects after Hamiltonian isotopy (Arnold’s conjecture). An alternative and much simpler proof is provided in [GKS12]. The aim of these lectures is to introduce the audience both to the microlocal theory of sheaves of [KS90] and to some aspects of symplectic topology.

Lectures 1-2
The derived category of sheaves and the six operations

Lectures 3-4
Microsupport of sheaves, examples and functorial properties

Lecture 5
Quantization of Hamiltonian isotopies

Lectures 6-7-8
Applications: the Arnold non-displaceability theorem after [GKS12], Legendrian knots after [STZ14], etc.

References


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