



# Oberwolfach Seminar

## Scattering Resonances in Quantum Mechanics, General Relativity and Hyperbolic Dynamics

Organizers: Semyon Dyatlov, Cambridge MA  
Colin Guillarmou, Orsay  
Peter Hintz, Zürich  
Maciej Zworski, Berkeley  
Date (ID): 19 – 25 November 2023 (2347a)  
Deadline: 1 September 2023

Scattering resonances replace eigenvalues in problems where energy can escape to infinity and are elegantly encoded as poles of Green's functions or scattering matrices: the real part presents the rest energy and the imaginary part the rate of decay. They appear under different names in different subjects: scattering poles (obstacle scattering), resonances (molecular dynamics, nuclear physics, MEMS,...), poles of Eisenstein series (automorphic scattering), quasinormal modes (general relativity), normal modes (seismology), Pollicott–Ruelle resonances (chaotic dynamical systems).

This seminar will consist of:

1. Introductory lectures on semiclassical/micro-local analysis
2. Specialized minicourses: Pollicott–Ruelle resonances in hyperbolic dynamics, Quasinormal modes in general relativity, Fractal uncertainty principle and chaotic scattering, Complex magic angles in multilayer materials
3. Research lectures by organizers and/or participants

Please see the website of the seminar for detailed information:

[www.mfo.de/occasion/2347a](http://www.mfo.de/occasion/2347a)

The seminar takes place at the Mathematisches Forschungsinstitut Oberwolfach. The Institute covers board and lodging. By the support of the Carl Friedrich von Siemens Foundation travel expenses can be reimbursed up to 150 EUR in average per person (against copies of travel receipts). The number of participants is restricted to 25.

**Applications including title, ID and date** of the intended seminar, together with **one pdf-file attached** containing

- full name and address, incl. e-mail address
- short CV and publication list
- present position, university
- name of supervisor of Ph.D. thesis
- a short summary of previous work and interest

should be **sent by e-mail** via [seminars@mfo.de](mailto:seminars@mfo.de) until 1 September 2023 to:

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