

ESI Senior Research Fellow Lecture Course Winter Term 2025/26

The Erwin Schrödinger International Institute for Mathematics and Physics (ESI) of the University of Vienna offers the following Lecture Course held by a Senior Research Fellow in residence during the Winter Term 2025/26:

Introduction to Brakke's Mean Curvature Flow Yoshihiro Tonegawa (Institute of Science Tokyo)

Lecture Course (250124 VU): October 27 - November 5, 2025

Time: 15:15- 17:00

Start: Monday, October 27, 2025

Further dates: Wednesday, October 29, Friday, October 31, Monday, November 3 and Wednesday, November 5, 2025

End: Wednesday, November 5, 2025

Venue: Erwin Schrödinger Institute, Boltzmann Lecture Hall

Abstract:

The mean curvature flow (MCF) is a family of surfaces evolving in time whose velocity is equal to the mean curvature at each point and time. It is one of the most important geometric evolution problems with many avenues of studies. The course will focus on the approach initiated by Brakke in the 1970's in the framework of geometric measure theory among other approaches. Starting with some preliminaries on the measure-theoretic aspects, the basic properties of MCF as well as some advanced topics such as the general existence theory will be covered.

Aim of the course:

The aim of the course is to familiarize the students with basic concepts in geometric measure theory first, and to present basic measure-theoretic properties of mean curvature flow in the setting of Brakke flow. The course is given as a series of lectures.

Reading list:

Brakke's mean curvature flow: an introduction, Springer Briefs in Mathematics, Springer, 2019, Yoshihiro Tonegawa.

Course website: <https://www.esi.ac.at/events/e590/>

Link to the course directory

Christoph Dellago

Director