NCTS

National Center for Theoretical Sciences

International GMT Seminar

On the Multiplicity One Conjecture for Mean Curvature Flows of Surfaces

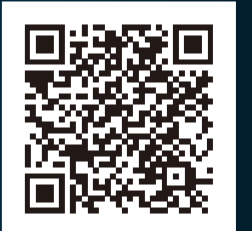|	
Time	**Thursday, 28 March 2024**
	6:30-8:30 a.m. (Taipei time)
Agenda	Get-together (30 min)
	Presentation Richard Bamler (60 min)
	Questions and Discussions (30 min)
Venue	**Online (HyHyve)**

Registration and more information:

Richard Bamler

University of California, Berkeley

We prove the Multiplicity One Conjecture for mean curvature flows of surfaces in $\mathbb{R}^3$. Specifically, we show that any blow-up limit of such mean curvature flows has multiplicity one. This has several applications. First, combining our work with results of Brendle and Choi-Haslhofer-Hershkovits-White, we show that any level set flow starting from an embedded surface diffeomorphic to a 2-spheres does not fatten. In fact, we obtain that the problem of evolving embedded 2-spheres via the mean curvature flow equation is well-posed within a natural class of singular solutions. Second, we use our result to remove an additional condition in recent work of Chodosh-Choi-Mantoulidis-Schulze. This shows that mean curvature flows starting from any generic embedded surface only incur cylindrical or spherical singularities. Third, our approach offers a new regularity theory for solutions of mean curvature flows that flow through singularities.