

International School on Extrinsic Curvature Flows | (smr 3209)



Monday, 4 June 2018

08:30 - 17:00

DAY 1

Location: Leonardo Building - Budinich Lecture Hall

08:30 **Financial issues at the Fermi Building for paid participants - in parallel, at the Leonardo Building registration of faculty and of participants not lodging at ICTP guesthouses.** 1h50' (Leonardo Building - Lobby)

All financially supported participants lodging at ICTP Guesthouses (except faculty) should please reach the Operations and Travel Office at the Fermi Building by 8:30 with passport, ICTP badge and travel receipts (if any travel support entitlement).

At the same time, faculty and other participants lodging outside ICTP guesthouses should please register their visits with the School secretary at the Leonardo Building (main entrance level, lobby). For full information and working hours please refer to the General Information Sheet.

10:20 **Welcome remarks and opening** 10'

10:30 **Monotonicity formulae and non-collapsing estimates for mean curvature flow with applications - 1** 1h0'

Speaker: Gerhard Huisken (Tübingen University)

Material:  **Abstract**

11:30 **Nonlinear extrinsic flows and ancient solutions - 1** 1h0'

Speaker: Panagiota Daskalopoulos (Columbia University)

Material:  **Abstract**

12:30 **Lunch** 2h0'

14:30 **Existence and regularity theories of Brakke flow - 1** 1h0'

Speaker: Yoshihiro Tonegawa (Tokyo Institute of Technology)

Material:  **Abstract**

15:30 **Coffee break** 30' (Leonardo Building - Lobby)

16:00 **Singularities of the mean curvature flow of mean convex hypersurfaces - 1** 1h0'

Speaker: Carlo Sinestrari (University of Rome Tor Vergata)

Material:  **Abstract**

Tuesday, 5 June 2018

09:00 - 17:00

DAY 2

09:00 **Monotonicity formulae and non-collapsing estimates for mean curvature flow with applications - 2** 1h15' (Leonardo Building - Budinich Lecture Hall)

Speaker: Gerhard Huisken (Tübingen University)

10:15 **Coffee break** 30' (Leonardo Building - Lobby)

10:45 **Existence and regularity theories of Brakke flow - 2** 1h15' (Leonardo Building - Budinich Lecture Hall)

Speaker: Yoshihiro Tonegawa (Tokyo Institute of Technology)

12:00 **Lunch** 2h0'

14:00 **Nonlinear extrinsic flows and ancient solutions - 2** 1h15' (Leonardo Building - Budinich Lecture Hall)

Speaker: Panagiota Daskalopoulos (Columbia University)

- 15:15 **Coffee break 30'** (Leonardo Building - Budinich Lecture Hall)
- 15:45 **Monotonicity formulae and non-collapsing estimates for mean curvature flow with applications - 3 1h15'** (Leonardo Building - Budinich Lecture Hall)
Speaker: Gerhard Huisken (Tübingen University)
- 19:30 - 21:00 **DAY 2: RECEPTION** - All participants are cordially invited to an informal reception on the Terrace of the Adriatico Guesthouse.
Location: Adriatico Guesthouse

Wednesday, 6 June 2018

- 09:00 - 17:00 **DAY 3**
Location: Leonardo Building - Budinich Lecture Hall
- 09:00 **Existence and regularity theories of Brakke flow - 3 1h15'**
Speaker: Yoshihiro Tonegawa (Tokyo Institute of Technology)
- 10:15 **Coffee break 30'** (Leonardo Building - Lobby)
- 10:45 **Singularities of the mean curvature flow of mean convex hypersurfaces - 2 1h15'**
Speaker: Carlo Sinestrari (University of Rome Tor Vergata)
- 12:00 **Lunch 2h0'**
- 14:00 **Monotonicity formulae and non-collapsing estimates for mean curvature flow with applications - 4 1h15'**
Speaker: Gerhard Huisken (Tübingen University)
- 15:15 **Coffee break 30'** (Leonardo Building - Lobby)
- 15:45 **Nonlinear extrinsic flows and ancient solutions - 3 1h15'**
Speaker: Panagiotas Daskalopoulos (Columbia University)

Thursday, 7 June 2018

- 09:00 - 17:00 **DAY 4**
Location: Leonardo Building - Budinich Lecture Hall
- 09:00 **Nonlinear extrinsic flows and ancient solutions - 4 1h15'**
Speaker: Panagiotas Daskalopoulos (Columbia University)
- 10:15 **Coffee break 30'** (Leonardo Building - Lobby)
- 10:45 **Monotonicity formulae and non-collapsing estimates for mean curvature flow with applications - 5 1h15'**
Speaker: Gerhard Huisken (Tübingen University)
- 12:00 **Lunch 2h0'**
- 14:00 **Singularities of the mean curvature flow of mean convex hypersurfaces - 3 1h15'**
Speaker: Carlo Sinestrari (University of Rome Tor Vergata)
- 15:15 **Coffee break 30'** (Leonardo Building - Lobby)
- 15:45 **Existence and regularity theories of Brakke flow - 4 1h15'**
Speaker: Yoshihiro Tonegawa (Tokyo Institute of Technology)

Friday, 8 June 2018

- 09:00 - 17:00 **DAY 5**
Location: Leonardo Building - Budinich Lecture Hall
- 09:00 **Singularities of the mean curvature flow of mean convex hypersurfaces - 4 1h15'**
Speaker: Carlo Sinestrari (University of Rome Tor Vergata)
- 10:15 **Coffee break 30'** (Leonardo Building - Lobby)
- 10:45 **Existence and regularity theories of Brakke flow - 5 1h15'**
Speaker: Yoshihiro Tonegawa (Tokyo Institute of Technology)
- 12:00 **Lunch 2h0'**
- 14:00 **Nonlinear extrinsic flows and ancient solutions - 5 1h15'**
Speaker: Panagiotas Daskalopoulos (Columbia University)
- 15:15 **Coffee break 30'** (Leonardo Building - Lobby)
- 15:45 **Singularities of the mean curvature flow of mean convex hypersurfaces - 5 1h15'**

Speaker: Carlo Sinestrari (University of Rome Tor Vergata)

Monday, 11 June 2018

09:00 - 17:00 DAY 6

Location: Leonardo Building - Budinich Lecture Hall

09:00 **Phase-field models for motion by mean curvature - 1** 1h15'

Speaker: Panagiotis Souganidis (University of Chicago)

Material:  **Abstract**

10:15 **Coffee break** 30' (Leonardo Building - Lobby)

10:45 **Dynamics, Symmetry and Asymmetry of Ancient Solutions to Mean Curvature Flow 1: ODE techniques in curvature flows** 1h15' (Leonardo Building - Budinich Lecture Hall)

Speaker: Sigurd Angenent (University of Wisconsin-Madison)

Material:  **Abstract**

12:00 **Lunch** 2h0'

14:00 **Phase-field models for motion by mean curvature - 2** 1h15'

Speaker: Panagiotis Souganidis (University of Chicago)

15:15 **Coffee break** 30' (Leonardo Building - Lobby)

15:45 **Motion by curvature of networks in the plane - 1** 1h15'

Speaker: Carlo Mantegazza (University of Naples Federico II)

Material:  **Abstract**

Tuesday, 12 June 2018

09:00 - 17:00 DAY 7

Location: Leonardo Building - Budinich Lecture Hall

09:00 **The thresholding scheme for mean curvature flow as minimizing movement scheme - 1** 1h15'

Speaker: Felix Otto (Max Planck Institute for Mathematics in the Sciences in Leipzig)

Material:  **Abstract**

10:15 **Coffee break** 30' (Leonardo Building - Lobby)

10:45 **Dynamics, Symmetry and Asymmetry of Ancient Solutions to Mean Curvature Flow 2: Uniqueness and Nonuniqueness of MCF from cones** 1h15' (Leonardo Building - Budinich Lecture Hall)

Speaker: Sigurd Angenent (University of Wisconsin-Madison)

12:00 **Lunch** 2h0'

14:00 **Motion by curvature of networks in the plane - 2** 1h15'

Speaker: Carlo Mantegazza (University of Naples Federico II)

15:15 **Coffee break** 30' (Leonardo Building - Lobby)

15:45 **The thresholding scheme for mean curvature flow as minimizing movement scheme - 2** 1h15'

Speaker: Felix Otto (Max Planck Institute for Mathematics in the Sciences in Leipzig)

19:30 - 21:00 DAY 7: RECEPTION - All participants are cordially invited to an informal reception on the Terrace of the Adriatico Guesthouse.

Location: Adriatico Guesthouse

Wednesday, 13 June 2018

09:00 - 17:00 DAY 8

Location: Leonardo Building - Budinich Lecture Hall

09:00 **Dynamics, Symmetry and Asymmetry of Ancient Solutions to Mean Curvature Flow 3: Velazquez' example, and asymptotics for ancient ovals** 1h15' (Leonardo Building - Budinich Lecture Hall)

Speaker: Sigurd Angenent (University of Wisconsin-Madison)

10:15 **Coffee break** 30' (Leonardo Building - Lobby)

10:45 **Phase-field models for motion by mean curvature - 3** 1h15'

Speaker: Panagiotis Souganidis (University of Chicago)

12:00 **Lunch** 2h0'

- 14:00 **The thresholding scheme for mean curvature flow as minimizing movement scheme - 3** 1h15'
Speaker: Felix Otto (Max Planck Institute for Mathematics in the Sciences in Leipzig)
- 15:15 **Coffee break** 30' (Leonardo Building - Lobby)
- 15:45 **Motion by curvature of networks in the plane - 3** 1h15'
Speaker: Carlo Mantegazza (University of Naples Federico II)

Thursday, 14 June 2018

09:00 - 17:00 DAY 9

Location: Leonardo Building - Budinich Lecture Hall

- 09:00 **Phase-field models for motion by mean curvature - 4** 1h15'
Speaker: Panagiotis Souganidis (University of Chicago)
- 10:15 **Coffee break** 30' (Leonardo Building - Lobby)
- 10:45 **The thresholding scheme for mean curvature flow as minimizing movement scheme - 4** 1h15'
Speaker: Felix Otto (Max Planck Institute for Mathematics in the Sciences in Leipzig)
- 12:00 **Lunch** 2h0'
- 14:00 **Dynamics, Symmetry and Asymmetry of Ancient Solutions to Mean Curvature Flow 4: Ancient convex solutions to MCF** 1h15' (Leonardo Building - Budinich Lecture Hall)
Speaker: Sigurd Angenent (University of Wisconsin-Madison)
- 15:15 **Coffee break** 30' (Leonardo Building - Lobby)
- 15:45 **Motion by curvature of networks in the plane - 4** 1h15'
Speaker: Carlo Mantegazza (University of Naples Federico II)

Friday, 15 June 2018

09:00 - 17:10 DAY 10

Location: Leonardo Building - Budinich Lecture Hall

- 09:00 **The thresholding scheme for mean curvature flow as minimizing movement scheme - 5** 1h15'
Speaker: Felix Otto (Max Planck Institute for Mathematics in the Sciences in Leipzig)
- 10:15 **Coffee break** 30' (Leonardo Building - Lobby)
- 10:45 **Motion by curvature of networks in the plane - 5** 1h15'
Speaker: Carlo Mantegazza (University of Naples Federico II)
- 12:00 **Lunch** 2h0'
- 14:00 **Phase-field models for motion by mean curvature - 5** 1h15'
Speaker: Panagiotis Souganidis (University of Chicago)
- 15:15 **Coffee break** 30' (Leonardo Building - Lobby)
- 15:45 **Dynamics, Symmetry and Asymmetry of Ancient Solutions to Mean Curvature Flow 5: Dynamics and symmetry of ancient convex mean curvature flows** 1h15' (Leonardo Building - Budinich Lecture Hall)
Speaker: Sigurd Angenent (University of Wisconsin-Madison)
- 17:00 **Closing remarks** 10'