



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)

For full information 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](#) [Video](#)

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

Speaker: Panagiota Daskalopoulos (Columbia University)

Material: [Abstract](#) [Slides](#)

12:30 **Lunch 2h0'**

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

Speaker: Yoshihiro Tonegawa (Tokyo Institute of Technology)

Material: [Abstract](#) [Video](#)

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](#) [Video](#)

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)

Material: [Video](#)

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)

Material: [Video](#)

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)

Material: [Video](#)

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)

Material:  **Video**

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)

Material:  **Video**

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)

Material:  **Video**

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)

Material:  **Video**

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)

Material:  **Video**

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)

Material:  **Video**

12:00 **Lunch** 2h0'

14:00 **Singularities of the mean curvature flow of mean convex hypersurfaces - 5** 1h15' (Leonardo Building - Budinich Lecture Hall)

Speaker: Carlo Sinestrari (University of Rome Tor Vergata)

Material:  **Video**

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

15:45 **Nonlinear extrinsic flows and ancient solutions - 5** 1h15' (Leonardo Building - Budinich Lecture Hall)

Speaker: Panagiotas Daskalopoulos (Columbia University)

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](#)  [Video](#)

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](#)  [Video](#)

12:00 **Lunch** 2h0'

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

Speaker: Panagiotis Souganidis (University of Chicago)

Material:  [Video](#)

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](#)  [Appendix: 1000 grains in motion](#)  [More course references](#)  [Slides](#)  [Video](#)

Tuesday, 12 June 2018

09:00 - 18:15

DAY 7

Location: Leonardo Building - Budinich Lecture Hall

09:00 **Phase-field models for motion by mean curvature - 3** 1h15' (Leonardo Building - Budinich Lecture Hall)

Speaker: Panagiotis Souganidis (University of Chicago)

Material:  [Video](#)

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)

Material:  [Video](#)

12:00 **Lunch** 2h0'

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

Speaker: Carlo Mantegazza (University of Naples Federico II)

Material:  [Slides](#)  [Video](#)

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

15:45 **The thresholding scheme for mean curvature flow as minimizing movement scheme - 1** 1h15' (Leonardo Building - Budinich Lecture Hall)

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

Material:  [Abstract](#)  [Video](#)

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 - 18:15

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)

Material:  [Video](#)



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

- 10:45 **The thresholding scheme for mean curvature flow as minimizing movement scheme - 2** 1h15' (Leonardo Building - Budinich Lecture Hall)
 Speaker: Felix Otto (Max Planck Institute for Mathematics in the Sciences in Leipzig)
 Material:  [Lecture notes](#)  [Video](#)
- 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)
 Material:  [Video](#)
- 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)
 Material:  [Appendix](#)  [Slides](#)  [Video](#)

Thursday, 14 June 2018

- 09:00 - 18:15 **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)
 Material:  [Video](#)
- 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)
 Material:  [Slides](#)  [Video](#)
- 12:00 **Lunch** 2h0'
- 14:00 **The thresholding scheme for mean curvature flow as minimizing movement scheme - 5** 1h15' (Leonardo Building - Budinich Lecture Hall)
 Speaker: Felix Otto (Max Planck Institute for Mathematics in the Sciences in Leipzig)
 Material:  [Lecture notes](#)  [Video](#)
- 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)
 Material:  [Slides](#)  [Video](#)

Friday, 15 June 2018

- 09:00 - 18:25 **DAY 10**
 Location: Leonardo Building - Budinich Lecture Hall
- 09:00 **Phase-field models for motion by mean curvature - 5** 1h15' (Leonardo Building - Budinich Lecture Hall)
 Speaker: Panagiotis Souganidis (University of Chicago)
 Material:  [Video](#)
- 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)
 Material:  [Video](#)
- 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 **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'