UNIVERSITÀ DEGLI STUDI DI PADOVA

DEPARTMENT OF GEOSCIENCES

Summer School

Mass movements under climate change: characterisation and monitoring

18th-20th September 2024
Padova, Italy

The Tessina landslide, Southern Alps

Mountain environments are particularly threatened by extreme events and climate change, especially in terms of slope instability. Mass movements are expected to increase in number and magnitude in the near future. Advanced remote sensing techniques, coupled with geophysical characterisation of the subsurface and monitoring systems, can now help us study the evolution of landslides. This multi-disciplinary Summer School will focus on the following critical open questions: i) meteorological predisposing conditions and extreme events: what can we expect? ii) remote sensing: how to monitor dynamics? iii) geophysical characterisation: what's inside? iv) monitoring system: early warning and long-lasting monitoring?

The Summer School will offer frontal lessons and a field trip in the Southern Alps mountains to visit landslide case studies. Lessons will be held in English.

Event organised in the framework of:
Le Geoscienze per lo Sviluppo Sostenibile (2023-2027)
PROGETTO DI ECCELLENZA FINANZIATO DAL MINISTERO PER L'UNIVERSITÀ E LA RICERCA (MUR)

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Padova, Italy

When: *18th-20th September 2024*

Where: *Department of Geosciences - University of Padova*
G. Gradenigo 6, 35131, Padova, Italy

Who: *PhD students, earth-sciences early career scientists, geologists, environmental and geotechnical engineers, public agency employers, etc.*

Participation is limited to maximum 25 participants.

Admission fee is fixed to euro 100.

How: *Send the registration form to comunicazione.geoscienze@unipd.it*
Admissions will be open till the maximum of participants number is reached.

Admitted participants will receive the instruction to proceed with the payment (via credit card / bank transfer) and must register within 15 days from the approval notification.

Travel expenses, board and lodging costs will be borne by the participants.

Certificate of attendance will be provided.

ORDINE DEI GEOLOGI REGIONE del VENETO

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Program

Day 1 Wednesday 18th September

9.00-9.30 registration & welcome

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Session 'Meteorological aspects & extreme events'

9.30-10.15 *L. Giovannini*, University of Trento, 'Local forecast and uncertainties'

10.15-11.30 *D. J. Peres*, University of Catania 'Extreme rainfall events and landslide triggering'

11.30- 11.45 Coffee Break

11.45- 12.30 *F. Marra*, University of Padova 'Monitoring heavy rainstorms that lead to debris flows and landslides'

12.45-14:15 lunch break

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Session 'Landslide monitoring and mapping'

14.15 – 15:00 *F. Catani*, University of Padova. 'Landslide hazard assessment'

15:00 – 16.30 *P. Confuorto*, University of Firenze, 'Landslide monitoring and mapping with Satellites'

16:30-16:45 break

16.45 – 17.45 *S.R. Meena*, University of Padova, 'Landslide Detection with Satellite Imagery and Machine Learning'

17.45-18 Discussion

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Day 2 Thursday 19th September

Session 'Applied Geophysics'

9.15-10:00 *G. Cassiani / J. Boaga*, University of Padova, 'Introduction to applied geophysics and seismic methods'

10:00-10-45 *L. Peruzzo,* University of Padova, 'Non-seismic methods'

10.45-11.00 coffee break

11.00-12.00 *S. Uhlemann*, Lawrence Berkeley National Laboratory, 'Geophysical monitoring of landslides'

12:00-12.45 *M. Pavoni*, University of Padova, 'The monitoring of permafrost in high mountain environments'

12.45-14.15 lunch break

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Session 'Remote Monitoring of Landslide and forecasting'

14.15 – 15.45 *E. Intrieri*, University of Firenze, 'In situ landslide monitoring and forecasting'

15.45 – 16.45 *A. Rosi*, University of Padova, 'Landslide hazard forecasting at regional scale'

16.45-17.00 coffee break

17-17.45 *A. Pasuto*, CNR-IRPI, 'The Lamosano and Tessina landslides: site characterisation and monitoring techniques'

17.45-18 Discussion

Day 3 Friday 20th September

Field trip to the landslides of Lamosano and Tessina (in collaboration with CNR IRPI and *Ordine Geologi del Veneto*)

8:30- 18:00 (transport provided by the organisation)

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