

Fluid Inclusions Study: Principles and Applications

The Jacques Touret legacy

WORKSHOP

ECROFI – WRI Meetings

Torino, 27-29 June 2025

Fluid inclusions provide crucial insights into geological processes, from high temperatures and pressures deep within the Earth to lower temperatures near the surface. This workshop is designed to introduce the study of fluids in rocks, following the scientific approach pioneered by Jacques Touret in his studies on aqueous and on carbonic fluid inclusions. It will cover examples of fluids related to magmatic, metamorphic, and ore deposit contexts, with particular focus on C cycle. This workshop suits all Earth scientists - students or professionals - who have not yet explored fluid inclusions but wish to incorporate this topic into their future research.

PROGRAM

Day 1 – 27th June 2025

8.30 – 9.30 Registration

9.30 – 10.00 Introduction (All)

Presentation of the course and teachers, Historical notes, including some words on the work of Jacques Touret

10.00 - 10.30 Presentation of Participants.

10.30 – 13.00 Fluid Inclusion classification (Alfons van den Kerkhof)

13.00 – 14.30 Lunch

14.30 – 16.00 Petrographic Studies of fluid Inclusions (Maria Luce Frezzotti)

16.00 – 17.30 Microthermometry (Alfons van den Kerkhof)

Day 2 – 28th June 2025

9.00 – 11.00 Thematic – Melt inclusions in metamorphic minerals (Silvio Ferrero)

11.00 - 11.30 Coffee break

11.30 – 13.00 Introduction to thermodynamics of fluid systems (Maria Luce Frezzotti)

12.30 – 14.00 Lunch

14.00 – 15.30 Isochores calculation (Jan Marten Huizenga)

15.30 – 16.30 Thematic – Significance of fluid and melt inclusions to understand igneous processes (Eniko Bali)

16.30 – 17.00 Coffee break

17.00 – 18.00 Thematic – Fluid inclusions in ore deposits (Pilar Lecumberri Sanchez)

Day 3 – 29th June 2025

9.00 – 11.00 Raman Spectroscopy (Maria Luce Frezzotti)

11.00 - 11.30 Coffee break

11.30 – 13.00 Thermodynamic modelling of COH fluids (Jan Marten Huizenga)

12.30 – 14.00 Lunch

14.00 – 15.30 Thematic - Fluids in the lower crust and upper mantle (Maria Luce Frezzotti)

15.30 – 17.00 Microscopy class – demonstration (All)

17.00 – 17.30 Final discussion (All)

The workshop is supported by Italian Ministry of University and Research (PRIN 2022, project no. 2022HA8XCS “Crustal carbon: exploring the role of the crust in the C cycle”)



Finanziato
dall'Unione europea
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