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Innovation Study

FCCIS WP2 workshop 2023
Angelicum, Rome, 13-15 Nov. `23
Welcome and Introduction

M. Boscolo, J. Keintzel and F. Zimmermann

Workshop Overview

- Only plenary talks on all 3 days
- Coffee breaks in the mornings (~10:30 - 11:00) and afternoons (~15:00 - 15:30)
- 1h lunch break
- Workshop dinner on Tuesday evening

Time	Monday	Tuesday	Wednesday
Morning	Optics design, beam-beam and e-cloud	Booster Design	Polarisation, Optics Tuning, BBA, MDI, Diagnostics, Collimation
12:30 - 13:30	Lunch		
Afternoon	Impedance, Collective Effects, Interplay Impedance, Beam-Beam	Alignment, IR Tuning, Vibrations, Feedback	Collimation, MDI, Beam Studies around the World and Future Plans



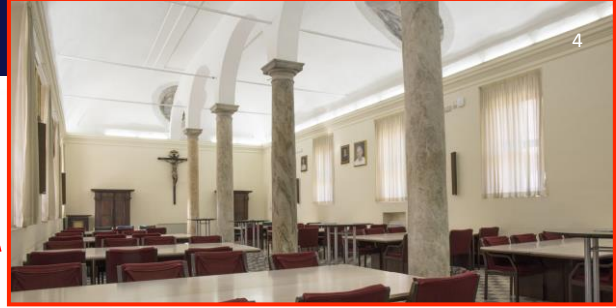
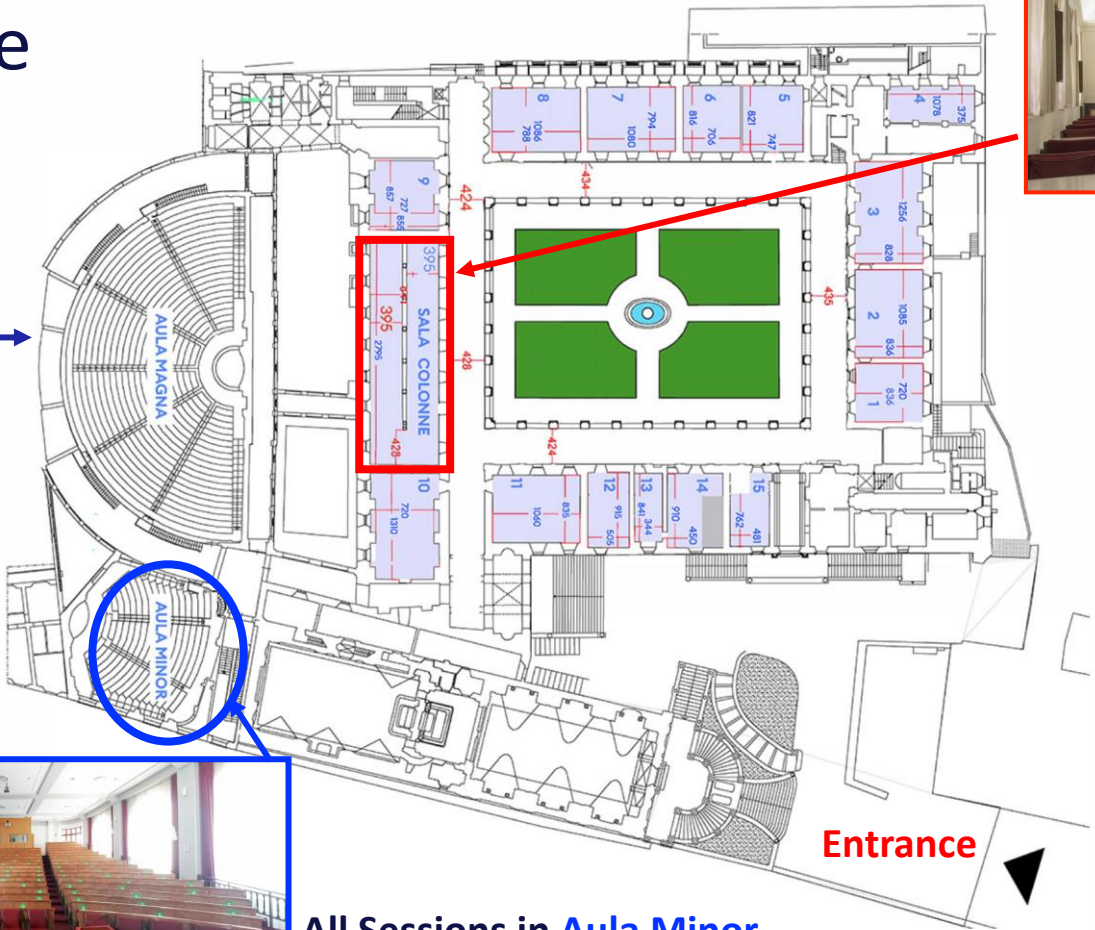
Practical Information

13-15 November 2023, Rome



Venue

Emiciclo available Mon-Tues



Coffee breaks and lunches in Sala Colonne



All Sessions in Aula Minor



Lunches, coffee breaks & Social events

LUNCH

12:00 – 13:00 SALA COLONNE

COFFEE BREAK

10:30 – 11:00 SALA COLONNE

15:00 – 15:30 SALA COLONNE

SOCIAL DINNER

Tuesday 14/11 20:00

Le Terrazze al Colosseo

Via Capo d'Africa 14, Roma

<https://www.leterrazzealcolosseo.it>



Team Local Organizers

Local Secretariat:

Valentina Magrini valentina.magrini@roma1.infn.it

Manuela Boscolo: manuela.boscolo@Inf.infn.it (Chair)

Andrea Ciarma: andrea.ciarma@Inf.infn.it

Francesco Franesini: Francesco.fransesini@Inf.infn.it



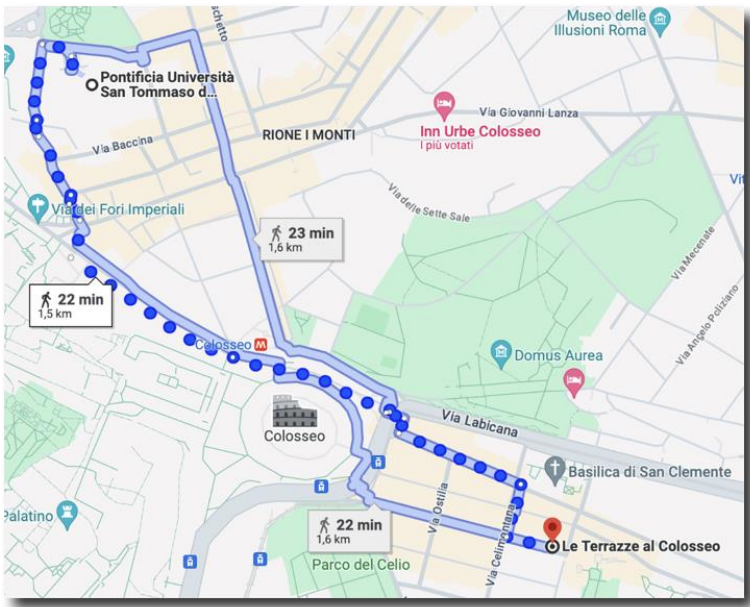
Valentina will be at the registration desk the three days of the workshop.



Please contact us for any practical information

Social dinner at 20:00

Le Terrazze al Colosseo

via Capo d’Africa, 54



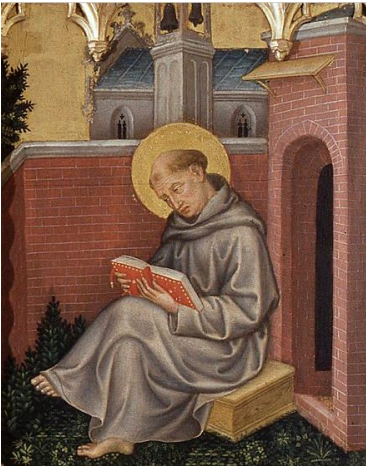
 20~25 mins (1.5km) through Via dei Fori Imperiali and Colosseo
 15~20 mins, several bus stops nearby (51,85,87,117,118)

<https://www.leterrazzealcolosseo.it>



A taste of the history of this venue

Pontifical University of Saint Thomas Aquinas

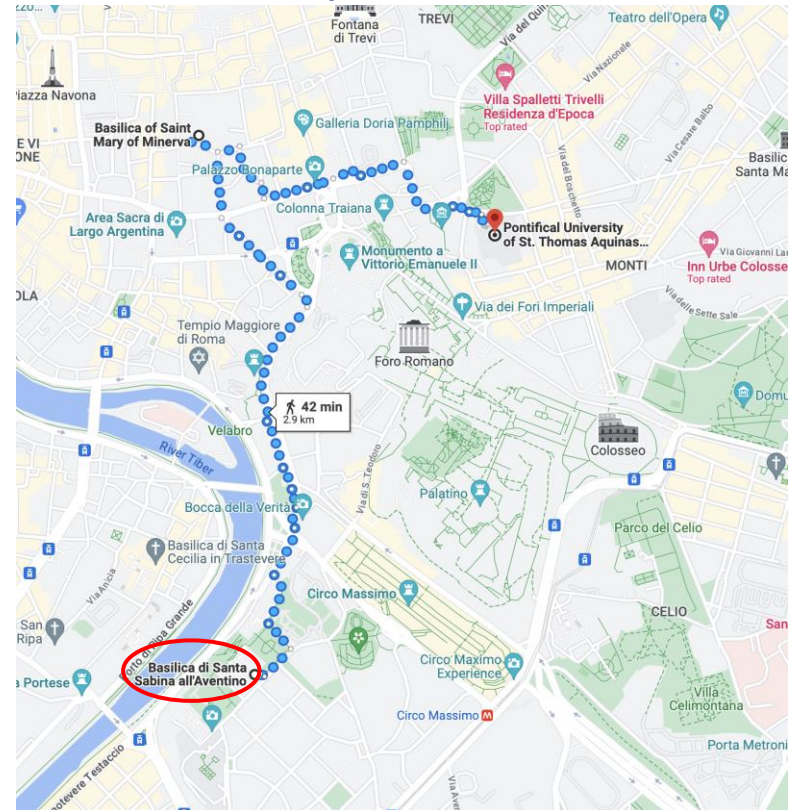


Gentile da Fabriano c. 1400
Angelicum patron, the Doctor Angelicus,
Saint Thomas Aquinas

The Angelicum has its roots in the Dominican mission to study and to teach truth.

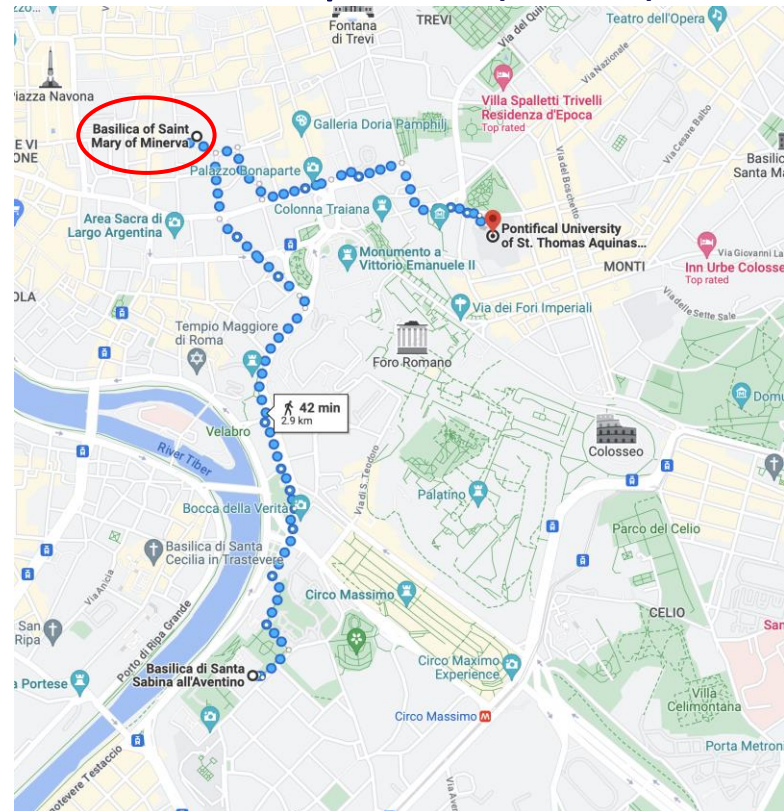
Angelicum: Pontifical University of Saint Thomas Aquinas (PUST)

- 1222** Foundation of Studium Conventuale in **Santa Sabina**, first dominican venue, established by Pope Honorius III.
- 1426** Raised to Studium generale (medioeval name for university) and venue moved at **Santa Maria sopra Minerva**.
- 1628** The convent of Minerva place of the Roman Inquisition.
- 22 June 1633** in a room of the Minerva Convent **Galileo Galilei**, after being tried for heresy, abjured his scientific theses, i.e. those of the Copernican theory.
- 1906** Pope Pius X transformed the college into the **Collegium Pontificium Internationale Angelicum**.
- 1908** The venue is moved to the present building.
- 1963** Pope John XXIII elevated Angelicum to to the rank of **pontifical university**.



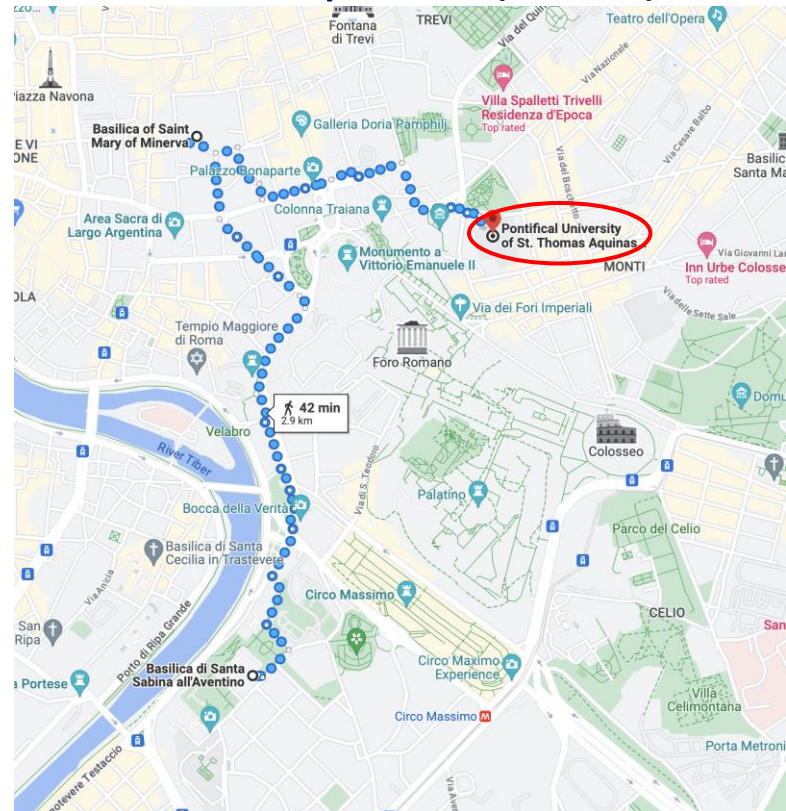
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Angelicum Building

1569 Church and Convent of Saints Dominic and Sixtus.
1930' Renovated.

The Angelicum Library

Originally housed 40,000 volumes in the Sala delle Colonne.
The collection that remains at the college today consists of approximately 400 000 volumes, about 6 000 manuscripts, 2 200 incunabula including 64 Greek codices, and 230 Hebrew texts including 5 Samaritan codices.
It is open to the scholarly community.



18-century view of the Church of Saints Dominic and Sixtus, and the former Dominican convent that now houses the Angelicum.

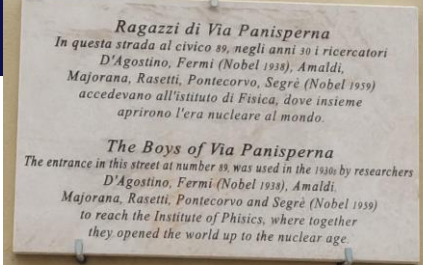
Faculties at the Angelicum

- Theology
- Philosophy
- Canon Law
- Social Sciences
- ISSR Mater Ecclesiae



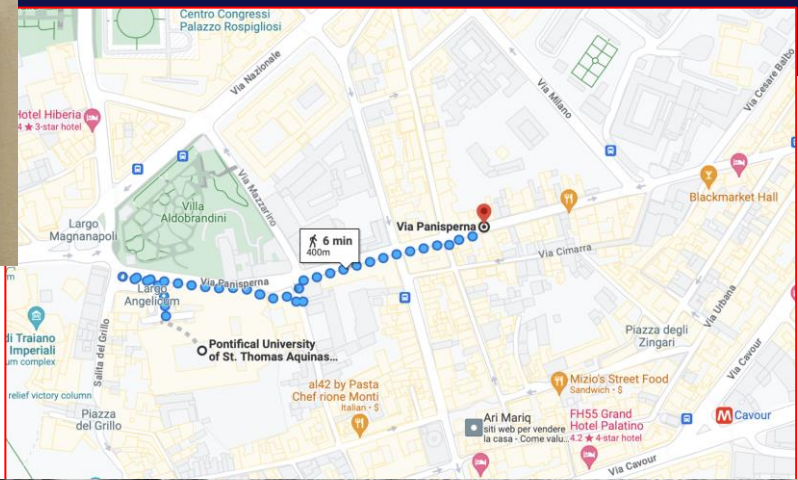
Motto: *Caritas veritatis* (The charity of truth)

Surrounding are ...only 400 m away



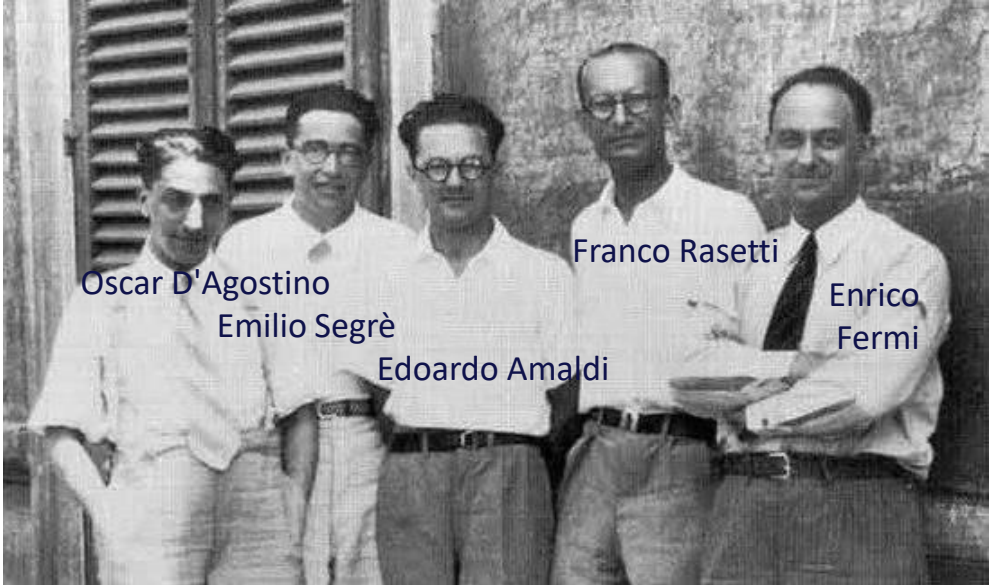
Via Panisperna 89/90

Former Royal Physics Institute of the University of Rome La Sapienza.



In 1934 the “Panisperna boys” famously discovered the slow neutrons, which later enabled the nuclear reactor and then the construction of the first atomic bomb.

Panisperna boys led by Enrico Fermi included Edoardo Amaldi, Oscar D'Agostino, Ettore Majorana, Bruno Pontecorvo, Franco Rasetti and Emilio Segrè



did we choose the right place ?

Galileo needed to abjure the Copernican theory “here” ☹️



Let us hope and be confident that we do not need to abjure the FCC !

This concern might be the reason why Michael Benedikt decided not to come, to avoid any possible risk, and perhaps also why Ilya Agapov has not yet arrived..

Status of the FCC-Study

The first half of the FCC Feasibility Study will soon be completed with the mid-term review

- End October 2023: midterm reports together with SAC & CRP reports were made available to CERN Scientific Policy Committee (SPC) and Finance Committee (FC)
- 20 – 22 November 2023: SPC and FC review meetings on mid-term review
- 2 February 2024: CERN Council meeting on mid-term review

By end of 2025 we should have addressed and “resolved” the burning open questions -

Accelerator Performance Risks: Main Rings & Booster

Main e⁺/e⁻ Rings:

- Collective effects at Z, esp. **resistive wall, beam-beam, and electron cloud**
- **Beam lifetime, dynamic aperture, and top-up operation** (backgrounds) and injection
- **Beam losses, collimation, and machine protection**
- **Alignment tolerances and beam-based alignment** versus mechanical alignment

Booster:

- **Collective effects at Z with stainless steel vacuum chamber**
- **Injection from HE Linac and extraction into Main Ring**

**for FCCIS WP2 scope, status,
and deliverables – see
I. Agapov’s talk this afternoon**



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thanks & wishing you a stimulating 3 days!

I. Agapov, M. Boscolo, F. Franesini J. Keintzel and F. Zimmermann

si fueris Rōmae, Rōmānō vīvitō more

when in Rome, do as the Romans do !

