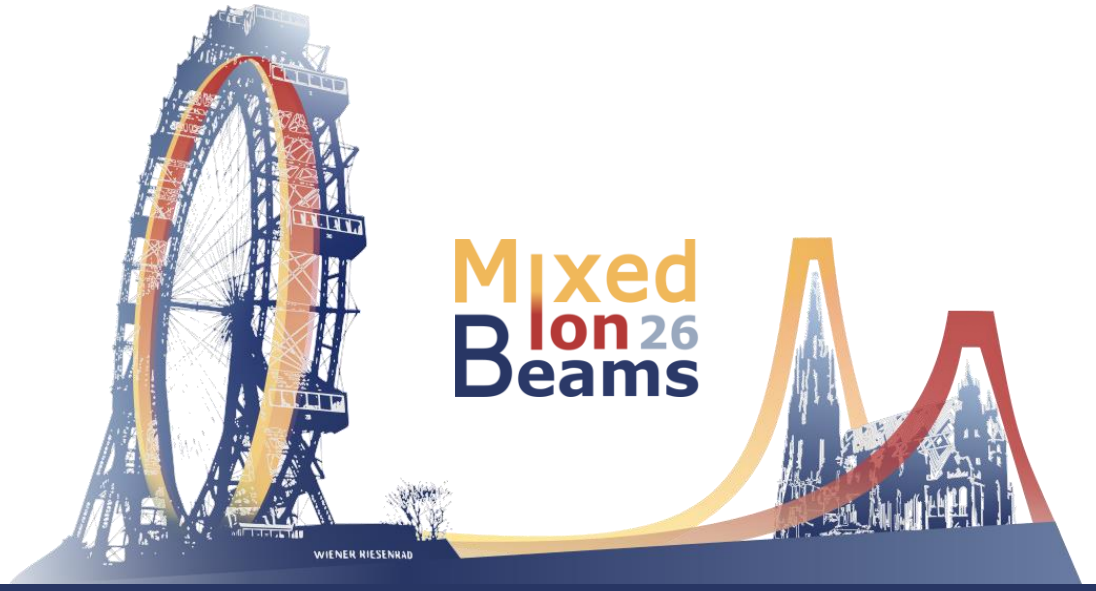
Welcome to the 1st Workshop on Mixed Ion Beam Delivery

October 9, 2026 | TU Wien | Vienna, Austria

Elisabeth Renner, Atominstitut, TU Wien

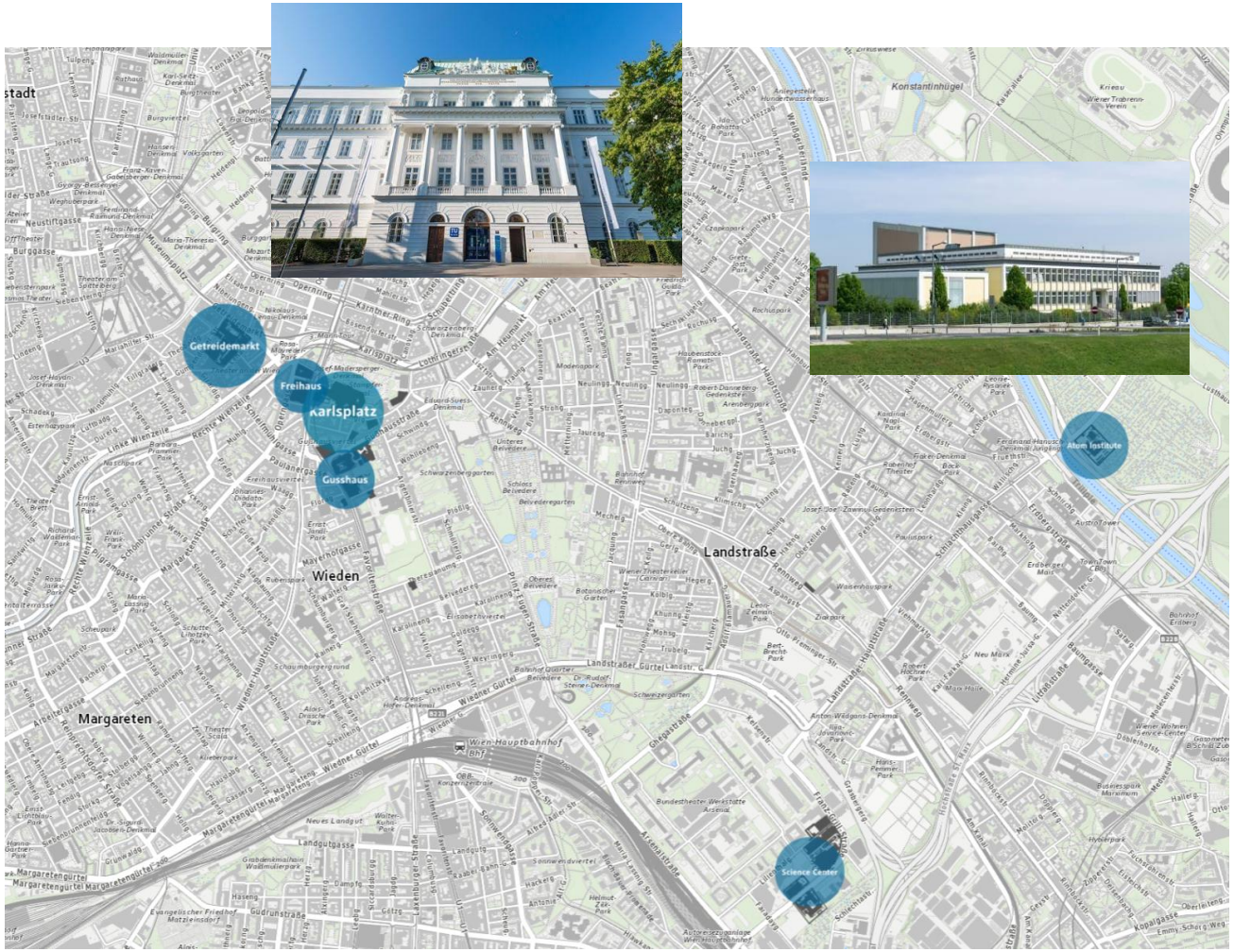
On behalf of the organizing committee!



TU WIEN TECHNISCHE UNIVERSITÄT WIEN
ATOMINSTITUT
MedAustron
GSI
CNAO
The National Center for Oncological Hadrontherapy

Welcome to Technische Universität Wien (TU Wien)

- University focused on engineering, computer science and natural sciences
- Founded in 1815 by Emperor Franz I.
- ~28k students
- Semester started on October 1st! You will see many students around!
- Distributed across Vienna



Careful: Different Lecture Rooms on Thursday and Friday!

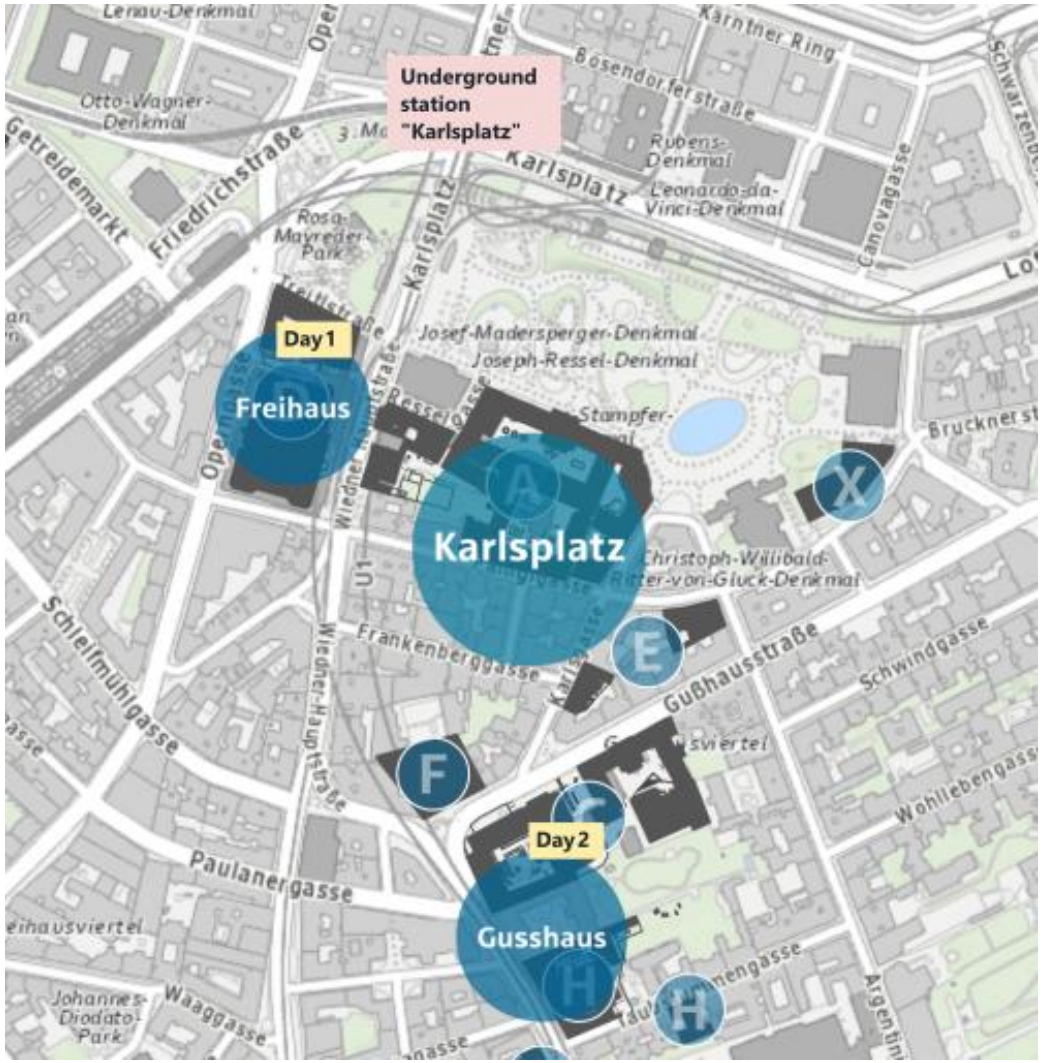
Day 1:

- Day 1: Vortragsraum Bibliothek
  - Campus Freihaus (library building).
  - Resselgasse 4, 1040 Wien

Day 2:

- Arnold Schmidt Raum
  - Campus Gusshaus
  - Getreidemarkt 9, 1060 Wien

Follow the signposts!



Thanks to everyone involved in the organization!

Program advisors:

- David Ondreka (GSI)
- Marco Pullia (CNAO)
- Elisabeth Renner (TU Wien)

Local organizing committee

- Esra Acar (TU Wien)
- Katrin Holzfeind (TU Wien)
- Matthias Kausel (MedAustron)
- Elisabeth Renner (TU Wien)
- Claus Schmitzer (MedAustron)
- Evgeniya Schimpf (TU Wien)

Local student helpers (AV support, coffee breaks, ...):

- Lena Cecil
- Lukas Fuxreiter
- Piera Galeazzo
- Harald Handerkas
- Dániel Makay
- Adna Smajlovic
- Maximilian Walter

Workshop Overview - Thursday

08:00

Registration, Welcome coffee
Vortragsraum Bibliothek, TU Wien 08:30 - 09:00

09:00

Welcome address
Vortragsraum Bibliothek, TU Wien 09:00 - 09:10

Overview of ongoing mixed-beam simulation activities at GSI *Andrii Pastushenko*
Vortragsra 09:10 - 09:20

Overview *Katrin Holzfeind*
Vortragsra 09:20 - 09:30

Xsuite tut *Giovanni Iadarola*

10:00

Vortragsraum Bibliothek, TU Wien 09:30 - 10:30

Coffee break
Vortragsraum Bibliothek , TU Wien 10:30 - 11:00

11:00

Simulating the acceleration of mixed beams with unequal A/Q *David Ondreka*
Vortragsraum Bibliothek, TU Wien 11:00 - 11:20

Q&A and discussion on synergies and needs *Giovanni Iadarola*
Vortragsraum Bibliothek, TU Wien 11:20 - 12:00

12:00

Lunch break

Simulations of beams with q/m offsets in synchrotrons

12:00 - 13:30 | *Vortragsraum Bibliothek, TU Wien* | 12:45 - 13:30

Welcome address and Introduction *Elisabeth Renner*
Vortragsraum Bibliothek 13:30 - 13:45

Mixed ion beams for ra *Marco Giuseppe Pullia*

14:00

Vortragsraum Bibliothek 13:45 - 14:05

Review of three years *Elisabeth Renner*
Vortragsraum Bibliothek, TU Wien 14:05 - 14:30

Ion-pair candidates and design considerations for mixed-beam delivery in NIMMS *Heli Huttunen*
Vortragsraum Bibliothek, TU Wien 14:30 - 14:50

HEARTS++ project *Edgar Cristopher Cortes Garcia*

15:00

Vortragsraum Bibliothek, TU Wien 14:50 - 15:05

Mixed Ion Beam Applications in Plasma Physics and beyond *Dr Martin Schanz*
Vortragsraum Bibliothek, TU Wien 15:05 - 15:20

Coffee break
TU Wien, Vienna, Austria 15:20 - 15:50

Mixed-beam generation in ion *Luigi Celona et al.*

16:00

Vortragsraum Bibliothek, TU Wi 15:50 - 16:15

LINACs in medical synchrotro *Bernhard Schlitt*
Vortragsraum Bibliothek, TU Wien 16:15 - 16:40

Sequential Synchrotron Injection Schemes for Mixed Ion Beam Generation *Matthias Kausel*
Vortragsraum Bibliothek, TU Wien 16:40 - 17:05

17:00

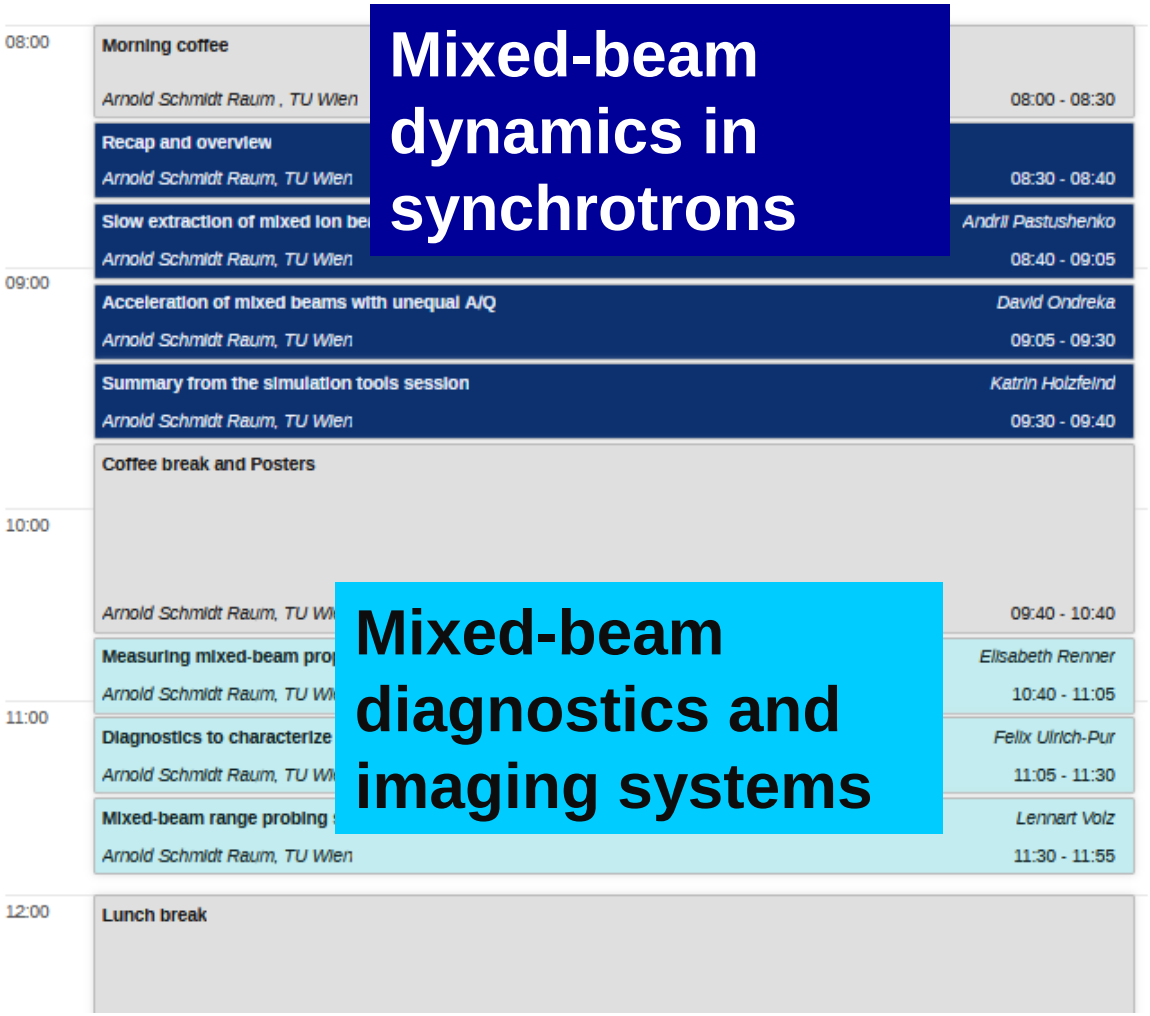
Beyond the box: Exotic mixed-beam generation ideas *David Ondreka*
Vortragsraum Bibliothek, TU Wien 17:05 - 17:10

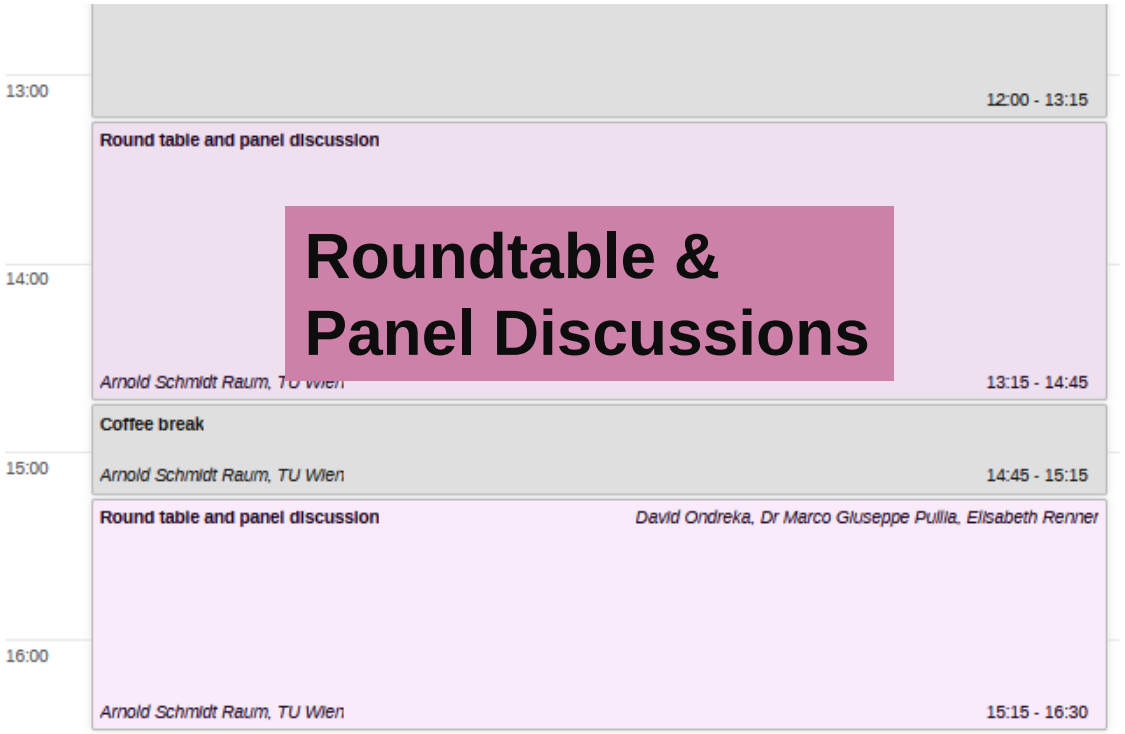
Discussion
Vortragsraum Bibliothek, TU Wien 17:10 - 17:30

Overview & applications

Mixed-beam generation

Workshop Overview - Friday





Workshop Objective

Idea to organize this workshop started at the Slow Extraction Workshop 2025 in Stony Brook.

Objectives

- Bring the community together
- Collect an overview of the field
- Discuss open challenges in mixed-beam delivery
- Identify potential new techniques, mitigation measures, improvements, other challenges, ...
- Discuss beam requirements for different applications
- ...

Coffee Breaks

- **Organized with lots of love by Katrin, Matthias and Evgeniya!**

- **Let’s embody the theme of this workshop – make sure that**
  - institutions,
  - fields of expertise,
  - and levels of seniority

  are not separated in phase space, but form a “well-mixed” distribution during the coffee breaks ☺



Meet & Greet

- Katrin & Matthias prepared a **“Meet and Greet” game.**
  - Take a game sheet
  - Find and talk to people, which fit the different categories
  - Once your entire sheet is filled, put it into the box until the end of the poster session on Friday.
  - Friday afternoon, a winner will be drawn
- Really unique and special prize, that fits the theme of the workshop perfectly!

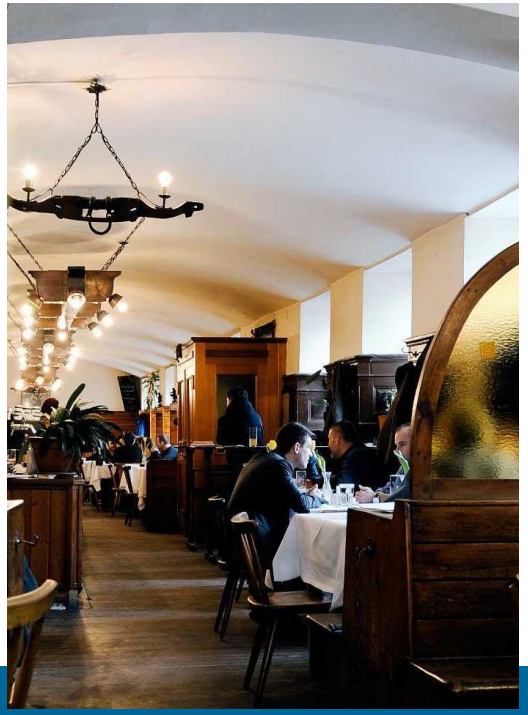
Early Career Researcher (ECR) Prize

- Kindly sponsored by **MedAustron** (250 Euro)
- **Award best ECR contribution** (poster or talk)
- Eligibility: Up to **6 years after completion of PhD**
- Judging panel: 9 workshop participants from different institutes
  - Many thanks in advance!
  - Their identify will only be revealed at the end!
- Winner will be announced Friday afternoon!

Dinner: Gasthaus Rebhuhn



- **Traditional Austrian cuisine**
  - Vegetarian, vegan and meat options
  - Soup, main course, dessert
  - Generally, big servings → come hungry!
  - Don’t forget to leave room for the dessert!



- **You can choose from the options that are listed on the menu**
- **First 2, potentially even 3 drinks per person are included.**

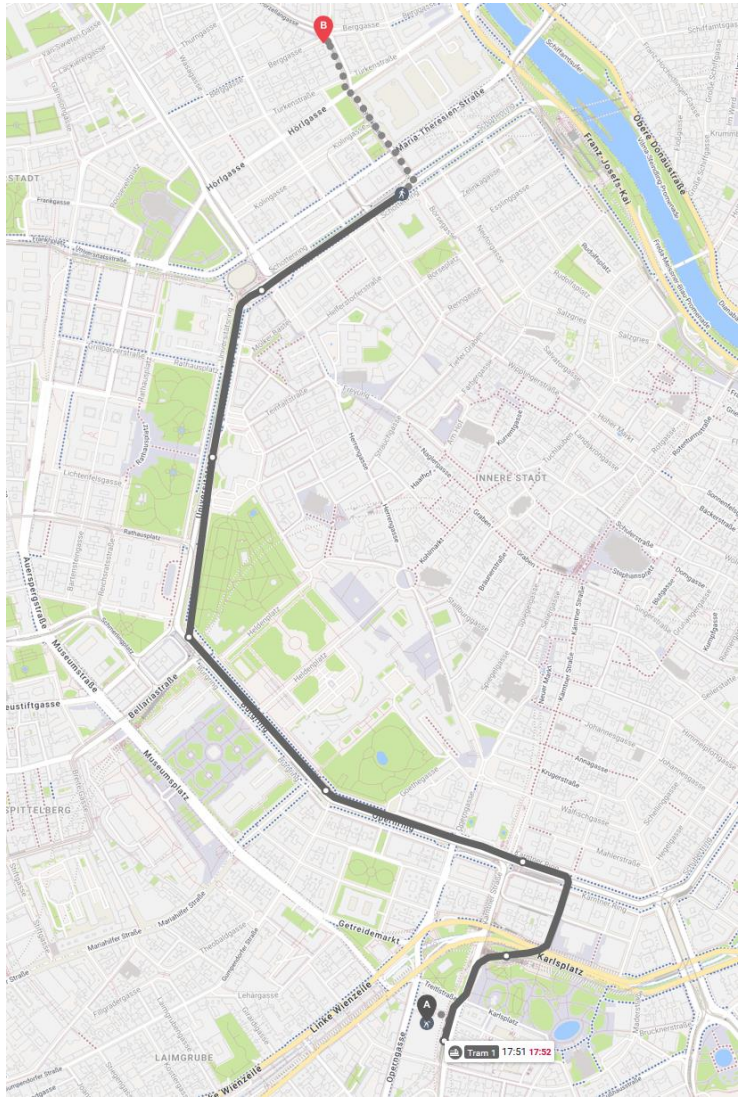
Printed directions available - take a copy!

Dinner – How to get there

(A) Public transport

- E.g. (see link or QR code)
  - Tram 1 in direction Prater.
  - Enter at the stop in front of this building: “Wien Resselgasse”
  - Exit at “Wien Börse”

- Alternatives: https://fahrplan.oebb.at/webapp/



Do you need a ticket?

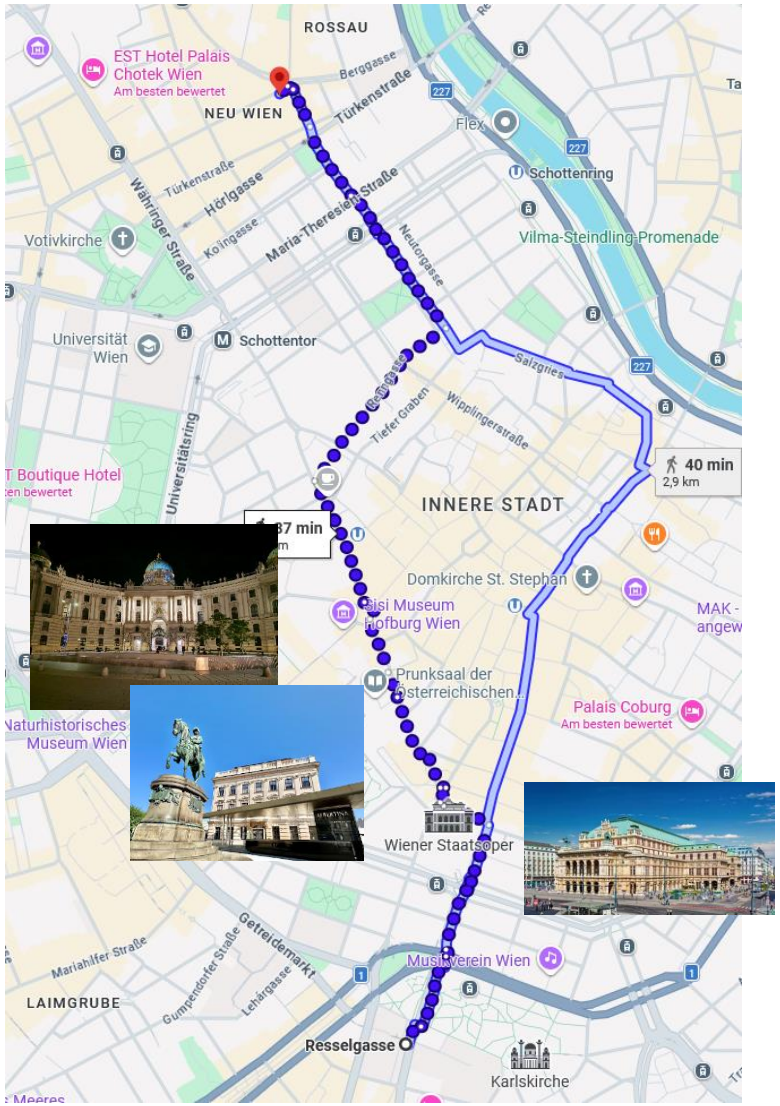
- **Return the ticket-request forms to Katrin** until the **end of the first coffee** break to obtain a ticket from us (included in conf. fee)
- You’ll get the tickets at the end of the last session.
- Please: only if you need one!
- One or two ways
- Alternatively, you can usually buy tickets in the tram

Dinner – How to get there

Printed directions available - take a copy!

B) Walking:

- ~40 min
- Through the scenic city center of Vienna ☺

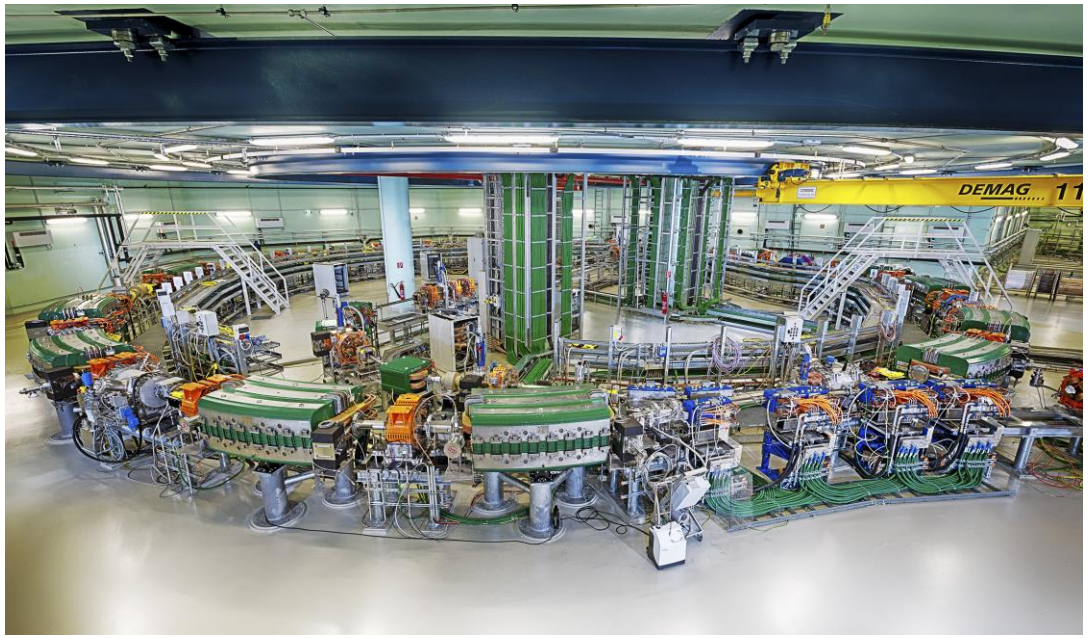


For both options: if you want travel together:

- ***Team tram***: we meet at 18:20 at the tram stop (tram leaves ~18:25)
- ***Team walking***: We meet in front of this building at 18:10 & leave at 18:15

MedAustron Visit

- **If you still want to attend, please inform us until tonight!**
- **Cost:**
  - Free if you don’t need a public transport ticket
  - 20 Euros if you need a public transport ticket
- **For details see the event webpage**
- **Thanks Claus, for the organization!**



© Kästenbauer/Ettl

Visitors under the age of 18, pregnant / breastfeeding visitors or visitors with a pace-maker are not permitted to enter radiation areas and are thus excluded from the guided tour.

Many thanks to TU Wien's Rector Prof. Schneider for his opening address!



Have a great workshop!