

The background of the slide is a photograph of a modern, multi-story building with a glass and metal facade, partially obscured by a blue overlay. The building has a distinctive architectural style with a mix of solid and open sections.

Iterative Solvers for Linear Systems

ONLINE | 5. – 7.9.2023

Lecturer



- **Lecturer**

- Prof. Dr. Andreas Meister (University of Kassel)

https://www.mathematik.uni-kassel.de/~meister/forschung_meister.php

Tentative Schedule: Day 1



09:00 - 10:00 Introduction, Basics and Practicals (Lecture + Practicals)

10:00 - 11:00 Consistency and Convergence (Lecture)

11:00 - 11:30 Break

11:30 - 12:15 Jacobi Method (Lecture)

12:15 - 13:00 Practicals

13:00 - 14:00 Lunch

14:00 - 14:30 Gauß-Seidel Method (Lecture)

14:30 - 15:00 Practicals

15:00 - 15:15 Q+A

Tentative Schedule: Day 2



09:00 - 10:00 Relaxation Schemes (Lecture)

10:00 - 10:45 Practicals

10:45 - 11:00 Break

11:00 - 11:30 Method of Steepest Descent (Lecture)

11:30 - 12:00 Practicals

12:00 - 13:00 Lunch

13:00 - 14:00 Method of Conjugate Gradients (Lecture)

14:00 - 14:45 Practicals

14:45 - 15:00 Q+A

Tentative Schedule: Day 3



09:00 - 10:00 Introduction to Multigrid Methods (Lecture)

10:00 - 10:30 Practicals

10:30 - 10:45 Break

10:45 - 11:45 GMRES and BICG (Lecture)

11:45 - 12:15 Practicals

12:15 - 13:15 Lunch

13:15 - 13:45 Variants of BICG (Lecture)

13:45 - 14:15 Practicals

14:15 - 15:15 Preconditioning

15:15 - 15:30 Q+A

- Participants are expected to use their own machines or institute clusters.
 - A recent version of
 - **MATLAB** <https://de.mathworks.com/products/matlab.html>
 - or **GNU Octave** <https://www.gnu.org/software/octave/index> (available for free)
- should be installed.

Course Webpage

- All course material is available under:
- <https://tinyurl.com/iter-lrz>
- Further information on:
 - Agenda
 - Slides
 - Exercises
 - Literature

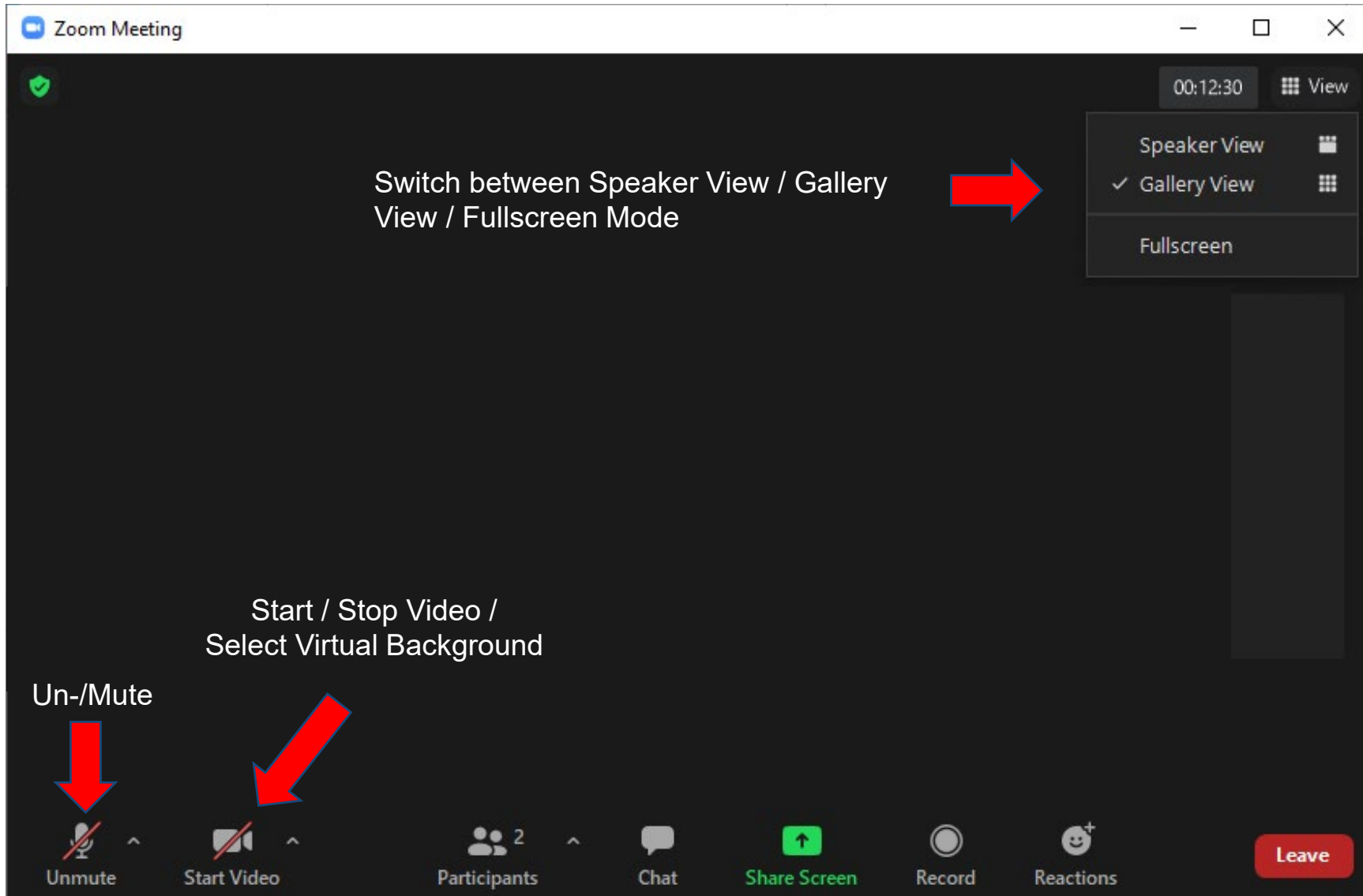


- We will use the **same link** for the complete course:
<https://lrz-de.zoom.us/j/68063989790?pwd=UEZNaIhPdUIWUmcxNC83WDNPNVXJCZz09>

Meeting ID: 680 6398 9790

Passcode: 179203

- **Do not share this link with others.**
- To ensure a pleasant experience with Zoom Meeting, we encourage participants to **download and install the latest Zoom application** via <https://zoom.us/download>.
- If you have problems with your computer audio, you can also **join by phone**.
Find your local number: <https://lrz-de.zoom.us/j/68063989790?pwd=UEZNaIhPdUIWUmcxNC83WDNPNVXJCZz09>



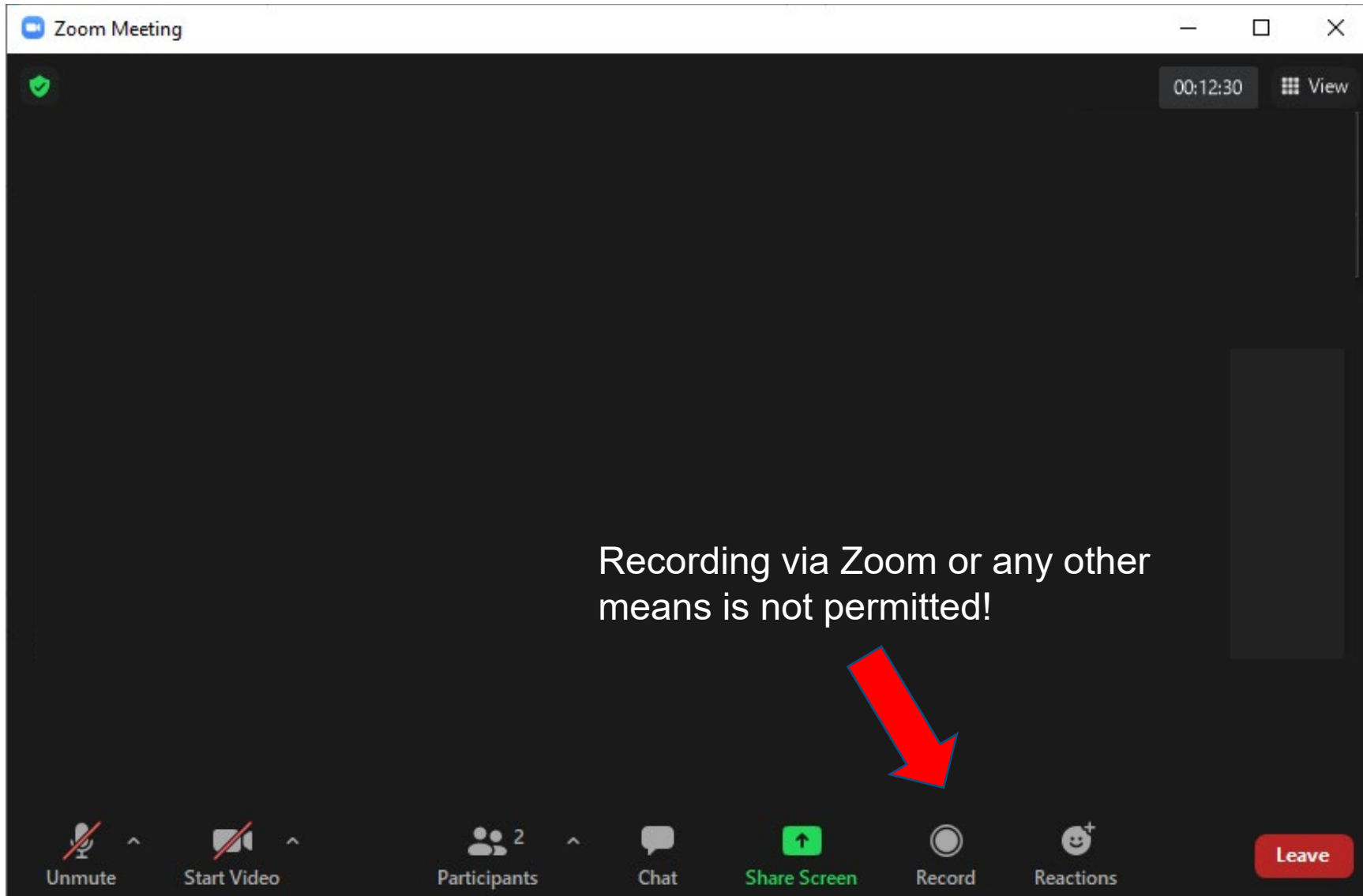
Kindly use “<first name> <last name> (<institute>)” as your screenname.

Otherwise you will not receive a certificate of attendance after the course.

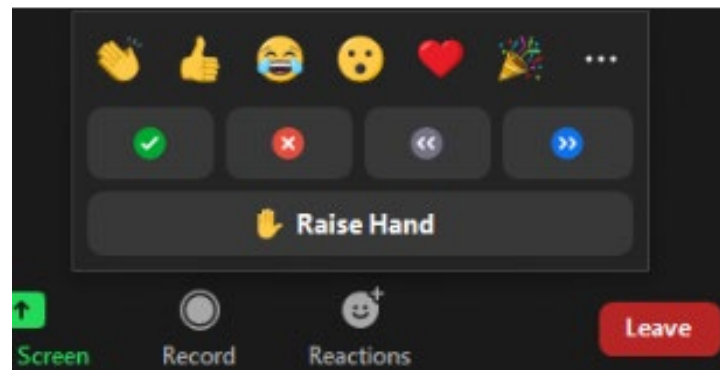
The image shows a Zoom meeting interface with a dark theme. The main window displays the meeting controls at the bottom, including Unmute, Start Video, Participants (2), Chat, Share Screen, Record, Reactions, and Leave. A red arrow labeled '1' points to the 'Participants' icon. To the right, a 'Participants (2)' panel is open, showing two participants: 'Volker Wei... (Me)' and 'Volker Weinberg Backup (Host)'. A blue box highlights the 'More >' button for the first participant, which has opened a context menu with 'Edit Profile Picture' and 'Rename' options. A red arrow labeled '2' points to the 'Rename' option, with a black box containing the text 'Rename Yourself' next to it.

1
Open Participants List

2
Rename Yourself



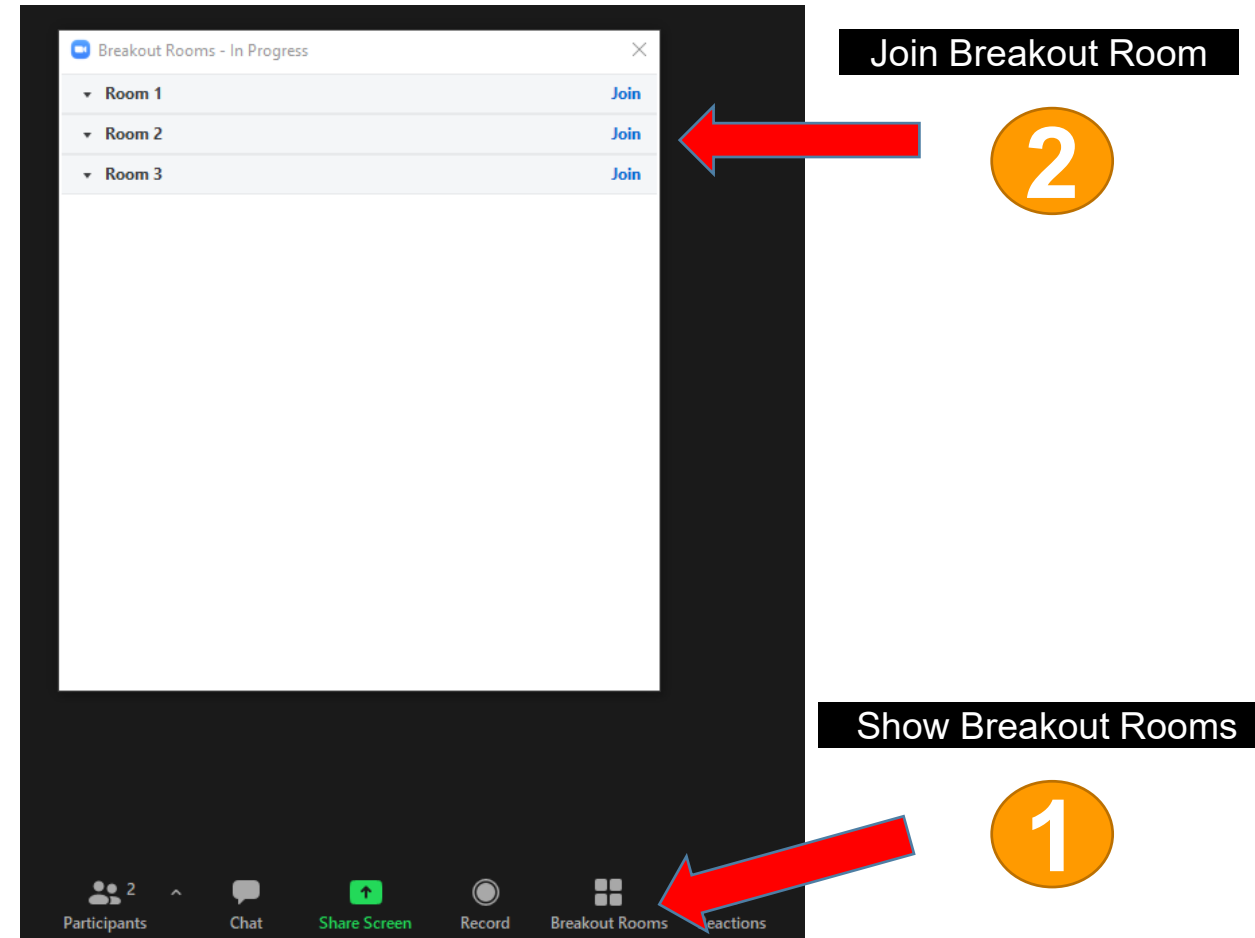
- Please **raise your hand** if you have questions (of general interest).
- You can also use **chat window** to ask questions.
- If you do not mind, please **show your video when asking questions** to make this course as interactive as possible.
- **Push to Talk:** The Push to Talk feature allows you to remain muted throughout the Zoom meeting and only if you hold down the spacebar you will be unmuted.
- **Instant Feedback:**



Breakout Rooms



- We have set up the following breakout rooms for the hands-on sessions:
 - Room A-B
 - Room C-H
 - Room I-M
 - Room N-Z
- Please select the room based on the first letter of your surname.



And now ...



Enjoy the course!