



PRACE - RedCLARA - SCALAC

Workshop on Online Teaching

Experiences from HLRS@GCS

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HLRS

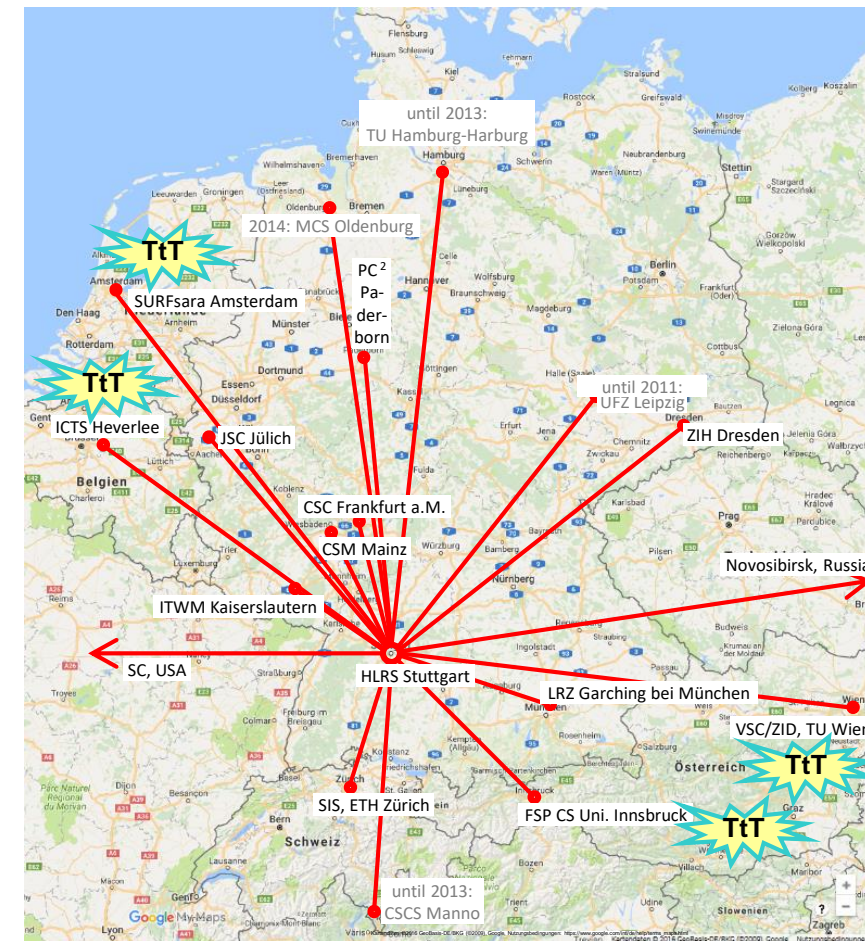
Dr. Volker Weinberg → see 3rd talk → on general experience @ GCS

LRZ

MPI & OpenMP Course → How to get ONLINE

▶ Advanced HLRS course

- ▶ Starting at **beginners** level
 - ▶ Going to **intermediate** level (in 3 days) or **high end** of MPI-3.1 (in 4-5 days)
 - ▶ Used at many locations in Europe
 - ▶ *Germany: Stuttgart (5 days), Garching, Jülich (3d), Dresden (4d), Mainz (4d), ...*
 - ▶ *Switzerland: ETH Zurich (4d)*
 - ▶ *Austria: Vienna (2 x 5d), Innsbruck*
 - ▶ *The Netherlands (4d)*
 - ▶ *Belgium*
- } *Train the Trainer program* 
- ▶ Until now: 9 ONLINE courses, 339 participants, 32 days, and 1268 participant-days



 → <https://www.hlrs.de/training/2021/TtT>



From Classroom to Synchronous Online

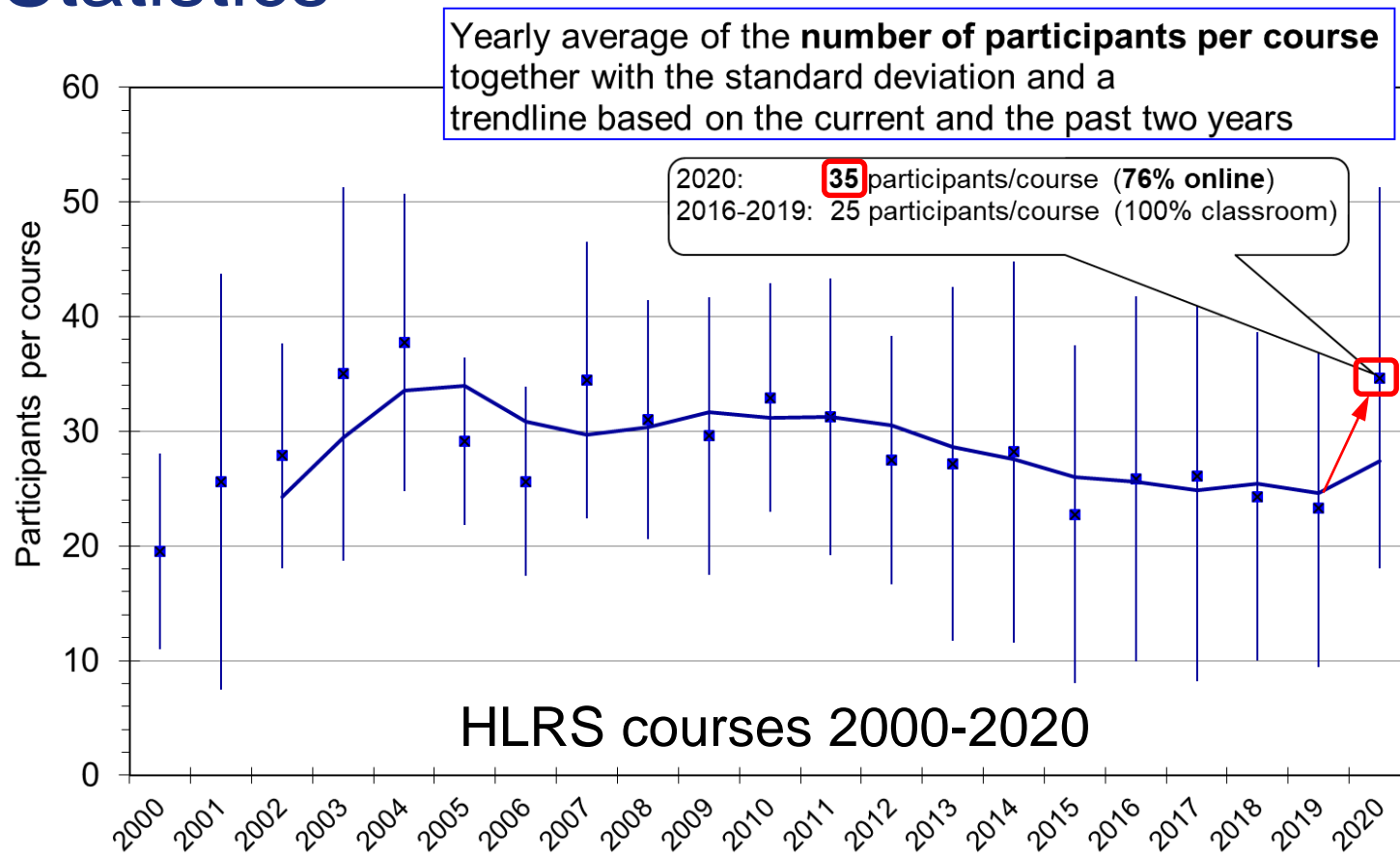
- ▶ Our **classroom** concept:
 - ▶ Alternating lectures (30-60') and exercises (20-45')
 - ▶ Exercises:
 - ▶ *Pairing of participants*
 - ▶ *Advanced exercises to keep fast groups busy*
 - ▶ *Coffee or lunch break after the exercises → additional time for slow groups*
- ▶ **First step** to ONLINE: Choose ZOOM, do same as in the classroom
 - Exercises with pairing of participants → does not really work
 - Breakout rooms → grouping 4 participants
 - 4 trainers for 40 participants (instead of only 1 trainer/classroom)

*Unhappy
participants
and trainers*

Our way to success for Synchronous Online

- ▶ Splitting lectures and exercises into half+half
 - Alternating ~25' lectures and ~15' exercises or quizzes
 - ▶ Skeletons and solution files + slides for each exercise
 - Optimal basis for self-studying
 - ▶ Only about 2-8 lines of code to be programmed per exercise
 - ▶ New advanced exercises also after the 1st half-exercise
 - Hard to define when only half of the chapter is already taught
 - ▶ Course is longer
 - Fewer additional lectures without exercises / on other aspects
 - ▶ Additional co-trainers through Train-the-trainer program
 - Assisting during the exercises: ~ 5-7 students / breakout room
 - ▶ Result → <https://www.hlr.de/training/par-prog-ws/MPI-course-material>
- *Huge amount of work*
 - *Back to 1 trainer per 40 participants*
 - *Participants feedback: ~9 out of 10 score points*
😊😊😊😊😊
 - *Recording → good basis for asynchronous online courses*

Statistics



By eliminating travel costs and travel time, we have many more participants per online course & Also more participants from outside Germany

2016-2019: 26,4%
 2020: 38,2%



THANK YOU FOR YOUR ATTENTION

www.prace-ri.eu