

McSAFER Training Course on SMR Neutronics and Thermal Hydraulics

March 22-24, 2022, LUT University, Lappeenranta, Finland

Final Program

Day 1 – Tuesday, March 22, 2022

Lecture room 7443

Time	Lecture	Lecturer
9:00-9:10	Opening the course	Juhani Hyvärinen, LUT
9:10-9:25	Course practicalities and a brief introduction of the McSAFER project	Heikki Suikkanen, LUT
9:25-10:25	CAREM-like model with PARCS-SCF	Juan Blanco, KIT (remotely)
10:25-10:45	Coffee break	
10:45-11:45	F-SMR core analysis	Anthime Farda, CEA
11:45-12:45	NuScale analysis with TRACE	Jorge Sanchez, UPM (remotely)
12:45-13:40	Lunch break	
13:40-14:40	CFD analysis of NuScale	Ladislav Vyskocil, UJV
14:40-15:40	Multiscale analysis of SMART	Manuel Garcia, KIT (remotely)
15:40-16:00	Coffee break	
16:00-17:00	Fuel cycle optimization	Hector Lestani, CNEA (remotely)

19:00-22:00	Dinner at the Kehruuhuone restaurant	
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Day 2 – Wednesday, March 23, 2022

Lecture room 7443

Time	Lecture	Lecturer
9:00-9:30	Introduction to multi-physics code coupling in the Kraken framework	Ville Valtavirta, VTT
9:30-10:00	Introduction to the physics solvers	Ville Valtavirta, VTT
10:00-10:20	Coffee break	
10:20-11:20	Python level introduction to the coupled calculation schemes used in the NuScale REA analyses	Ville Valtavirta, VTT
11:20-12:20	Running and analysis of introductory coupled simulation	Ville Valtavirta, VTT
12:20-13:10	Lunch break	
13:10-14:10	Constructing input models for NuScale REA analyses	Ville Valtavirta, VTT
14:10-15:10	Constructing coupled calculation models for NuScale REA analyses	Ville Valtavirta, VTT
15:10-15:30	Coffee break	
15:30-16:30	Running and analysis of NuScale REA scenario	Ville Valtavirta, VTT

Day 3 – Thursday, March 24, 2022

Lecture room 7443 and Nuclear Safety Research Laboratories

Time	Lecture				Lecturer
9:00-9:45	Experimental investigations of SMRs with the MOTEL test facility				Juhani Hyvärinen, LUT
9:45-10:00	Lab works briefing and division into groups				Heikki Suikkanen, LUT
10:00-10:15	Moving to the laboratories				
10:15-11:15	Group A Natural circulation experiment (E. Kotro, LUT)	Group B Measurement uncertainties lecture (J.Telkkä, LUT)	Group C LUT laboratory tour including MOTEL (M. Puustinen, LUT)	Group D Advanced measurement techniques (L. Pyy, LUT)	
11:15-11:20	Changing groups				
11:20-12:20	Group A Measurement uncertainties lecture (J.Telkkä, LUT)	Group B LUT laboratory tour including MOTEL (M. Puustinen, LUT)	Group C Advanced measurement techniques (L. Pyy, LUT)	Group D Natural circulation experiment (E. Kotro, LUT)	
12:20-13:20	Lunch break				
13:20-14:20	Group A LUT laboratory tour including MOTEL (M. Puustinen, LUT)	Group B Advanced measurement techniques (L. Pyy, LUT)	Group C Natural circulation experiment (E. Kotro, LUT)	Group D Measurement uncertainties lecture (J.Telkkä, LUT)	
14:20-14:25	Changing groups				
14:25-15:25	Group A Advanced measurement techniques (L. Pyy, LUT)	Group B Natural circulation experiment (E. Kotro, LUT)	Group C Measurement uncertainties lecture (J.Telkkä, LUT)	Group D LUT laboratory tour including MOTEL (M. Puustinen, LUT)	
15:25-15:40	Moving back to the lecture room				
15:40-16:00	Concluding the course				Heikki Suikkanen, LUT