Program of ESFR-SMART workshop on
Instrumentation for the Safety of Liquid Metal Facilities
HZDR Dresden, April 10th – 12th, 2019

Day 1 (April 10th, 2019)

Time	Title	Lecturer	Organization
13:00	Registration		
Session 1: Introduction			
14:00	Introduction of HZDR	G. Gerbeth	HZDR
14:20	Overview ESFR-SMART	K. Mikityuk	PSI
15:00	Overview on instrumentation for SFRs	F. Baqué	CEA
15:40	Overview DRESDYN Project	F. Stefani	HZDR
16:00	Coffee Break		
16:20	Lab Tour (MHD Lab, DRESDYN)		
18:00	End of day 1, transfer back to the hotels		
19:30	**Dinner** at Schloss Eckberg - Bautzner Straße 134, 01099 Dresden		

Day 2 (April 11th, 2019)

Time	Title	Lecturer	Organization
08:30	Introduction of student activity	N. Krauter	HZDR
Session 2: Na quality control			
08:50	Instrumentation for sodium quality control	F. Baqué	CEA
Session 3: In-service inspection			
09:30	Telemetry in Na	F. Baqué	CEA
10:00	Coffee Break		
Session 4: Gas Detection			
10:20	Inductive and resistive methods for gas detection	T. Wondrak	HZDR
10:50	Bubble detection via ultrasound transit time technique and X-ray	T. Richter	HZDR
Session 5: Leakage Detection			
11:20	Leak detection in the MEGAPIE target and a radiation resistant pressure gage	K. Thomsen	PSI
11:50	Sodium leakage detection	M. Girard	CEA
Session 6: Level detection			
12:20	Distance and contour measurements of liquid metal free surfaces	R. Stieglitz	KIT
13:00	Lunch		

Time	Title	Lecturer	Organization
14:30	Inductive Level Sensors	N. Krauter	HZDR
Session 7: Nuclear instrumentation			
15:00	In-vessel detectors and measurement systems for SFR	P. Filliatre	CEA
Session 8: Flow Measurements			
15:30	Local inductive flow measurements	N. Krauter	HZDR
16:00	Contactless inductive flow tomography	T. Wondrak	HZDR
16:30	Coffee Break		
16:50	Ultrasound doppler velocimetry	S. Eckert	HZDR
17:20	Magnetic field measurements for qualitative flow regime assessment. Application to induction electromagnetic pumps	L. Buligins	UL
18:00	End of day 2, transfer back to the hotels		

Day 3 (April 12th, 2019)

Time	Title	Lecturer	Organization
08:30	Students session: Experiments in 3 groups 1. Flow measurements with the Eddy Current Flow Meter (ECFM) in GaInSn 2. UDV flow measurements in GaInSn 3. Numerical Simulation of ECFM with COMSOL Multiphysics		
10:00	Coffee Break		
Session 9: Simulations and validations			
10:20	Euler-Euler Multiphase Flow Simulation at HZDR	R. Rzehak	HZDR
10:50	Modelling tools and design of SFRs	E. Shwageraus	UCAM
11:30	Students session (presentation of results)		
12:00	Discussion	All	
12:20	Conclusions	ESFR-SMART	
12:30	Lunch		
13:30	End of day 3, transfer back to hotels, train station and airport		