Contribution ID: **534** Type: **ORAL**

The DRESDYN project: A new facility for thermohydraulic studies with liquid sodium

Thursday 29 June 2017 08:00 (20 minutes)

For the safe operation of SFRs there is a growing need for small and medium sized liquid metal experiments to study various thermohydraulic and safety aspects, comprising effects such as flow metering, local velocity measurements, gas bubble entrainment, and early gas bubble detection. We give a short description of the new large-scale infrastructure DRESDYN (DREsden Sodium facility for DYNamo and thermo-hydraulic studies) at HZDR. For the liquid sodium installations in the framework of DRESDYN a new experimental hall with an area of approximately 500 m2 became available in 2016. The total inventory of sodium will be 12 m3. The development of flow measurement techniques has a long tradition at HZDR that will be delineated in the talk. It covers contactless flow-rate sensors, local velocity measurements such as the Ultrasound Doppler Velocimetry (UDV) or the Contactless Inductive Flow Tomography (CIFT), as well as X-ray visualizations of liquid metal two-phase flows.

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Session Classification: 6.8 Experimental Facilities

Track Classification: Track 6. Test Reactors, Experiments and Modeling and Simulations