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## Eddy current flowrate and local ultrasonic velocity measurements in liquid sodium

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For the safe operation of sodium cooling systems a monitoring of the flow field is often desirable. We report first on the development of a new eddy current flowmeter (ECFM) and related tests in sodium. The objective of this sensor is its positioning above the fuel subassemblies and the detection of possible blockages of the sodium flow through the multitude of subassemblies. The sensor consists of a number of coils a part of which is fed by an excitation AC current. The assembly of coils is placed in a thimble and the measured flowrate is proportional to the integral flow around this thimble. In the second part we report on the preparation of local ultrasonic velocity measurements. Here the objective is to study the flow field resulting from a powerful electromagnetic pump installed at the PEMDYN facility of CEA in Cadarache (France). As for the ECFM, related test measurements were performed at the sodium facility NATAN of HZDR.

### Country/Int. Organization

Germany and France

**Author:** Mr KRAUTER, Nico (Helmholtz-Zentrum Dresden - Rossendorf)

**Co-authors:** Dr STEFANI, Frank (Helmholtz-Zentrum Dresden - Rossendorf); Dr GERBETH, Gunter (Helmholtz-Zentrum Dresden - Rossendorf); Mrs GIRARD, Marianne (CEA Cadarache); Dr GASTALDI, Olivier (CEA Cadarache); Dr ECKERT, Sven (Helmholtz-Zentrum Dresden - Rossendorf); Mr FRANKE, Sven (Helmholtz-Zentrum Dresden - Rossendorf)

**Presenter:** Mr KRAUTER, Nico (Helmholtz-Zentrum Dresden - Rossendorf)

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