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Numerical Modelling of Flow Induced vibrations in Nucelar fuel rods

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Flow induced vibration (FIV) is a known problem in nuclear reactors which exist due to the interaction between the turbulent flow of the coolants and the fuel rod bundles generating vibrations which are undesirable. These vibrations can be a major cause of fatigue failures, stress corrosion cracking and fretting wear of materials, which lead to stand-still costs. To numerically model the interaction between the fluid and the structure, the system should couple the solvers for both the phases. Coupling is achieved by mapping the forces and displacements at the interface of fluid and structure domains, also known as the partitioned coupling.

Technical Track

Nuclear Thermal-Hydraulics

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