ID de Contribution: **54** Type: **Présentation orale**

Magnetic field reversals in numerical simulations of the Von Karman Sodium experiment

lundi 23 juin 2025 14:20 (20 minutes)

We have considered several geometries and numerical configurations to model and simulate the Von Karman Sodium (VKS) experiment. The most striking result is that the addition of an immobile sodium layer around the cylinder containing the sodium flow enables magnetic field reversals. In the Von Karman Sodium experiment, a statistically stationary magnetic field is first created by the rotation of iron blades, and driven by the von Karman flow, before another branch becomes accessible, leading to periodic or erratic reversals of the magnetic field. The access conditions and dynamics of the system on the inversion branch appear to depend strongly on the modeling of the impellers in our simulations, which are the main source term of the flow, both for the velocity and magnetic fields. We will present some recent results from simulations using the SFEMaNS code, and analyses based on POD.

Auteurs: NORE, Caroline (LISN); BOUSQUET, Rémi (LISN); BOTEZ, Victor (LISN)

Orateur: BOUSQUET, Rémi (LISN)

Classification de Session: Présentations