

Abstract Submitted
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Surface manifestations of an underlying turbulent flow PABLO GUTIERREZ, SÉBASTIEN AUMAITRE, SPEC / CEA-Saclay — We present an experimental study of a turbulent flow in a quasi bidimensional configuration and with a free surface. Turbulence is excited in the volume of a liquid metal by using an electromagnetic forcing with a spatially tunable magnetic field. We will present our measurements of the velocity field at the surface, obtained by tracking particles, and of the surface deformation, obtained by a direct optical measurement. The turbulent flows under study show a strong correlation between the imposed forcing geometry and the mean velocity field. We also observed considerable deformation of the free surface and the preferential concentration of the particles used for visualization. Consequently, we will discuss possible physical scenarios at the origin of this concentration, which also depends on the forcing geometry.

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