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Path instability of a spheriodal bubble in weak turbulence GIHUN SHIM, CHANGHOON LEE, Department of Computational Science Engineering, Yonsei University, Seoul, 03722, Korea — Locomotion of a contaminated spheriodal bubble in still fluid and homogeneous isotropic turbulence is numerically investigated. On the surface of the bubble, the no-slip boundary condition is imposed using an immersed boundary method. The size of an air bubble ranges between 1 and 4 mm and the shape of a bubble is fixed. Depending on the nondimensional parameters such as Galilei number defined as the ratio of the gravitational force to the kinematic viscosity, in quiescent fluid, the bubble rises exhibiting zigzag pattern due to alternately shedded vortices. An oscillatory angular motion of the bubble is also observed while it rises. The range of Galilei number is $Ga = 100 \sim 790$, and the aspect ratio of a bubble ranges $\chi = 1.0 \sim 1.3$. The behavior of a bubble in turbulent environment is also studied. Detailed results will be presented in the meeting.

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