

Abstract Submitted  
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**Instability vaccination: A structural design to reduce Rayleigh Taylor instability** AMIN ESMAEILI, Graduate student of Univ. of Tsukuba — Instability vaccination can be defined as designing a structure to stimulate the system in order to develop immunity against its instability. In this work we have tried to do this stabilization by a new technique. Previously some suppression of R-M instability was done by insertion of magnetic field, but in this work we have tried to do this suppression by proposing a configuration similar to the shape of instability, we call it instability vaccination. This design will reduce the rotations (mostly rotations of Rayleigh Taylor instability) in the fluids that cause more mixing and instabilities. In this paper, we consider the evolution of the interface between two ideal semi-infinite fluid surfaces, using two-dimensional Riemann solver, to solve the Euler equations. First, we performed evolution of a rectangular disorder between the 2 surfaces using two-dimensional Riemann problem for the equations of Euler. Next, the interface was replaced with a perturbation that was part rectangular and part semi-circular (like a mushroom). The simulation was continued till some time steps using the HLL method. We have seen that the rotations of Rayleigh Taylor (R-T) instability were decreased in the second case. Email: amin@cavelab.cs.tsukuba.ac.jp

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