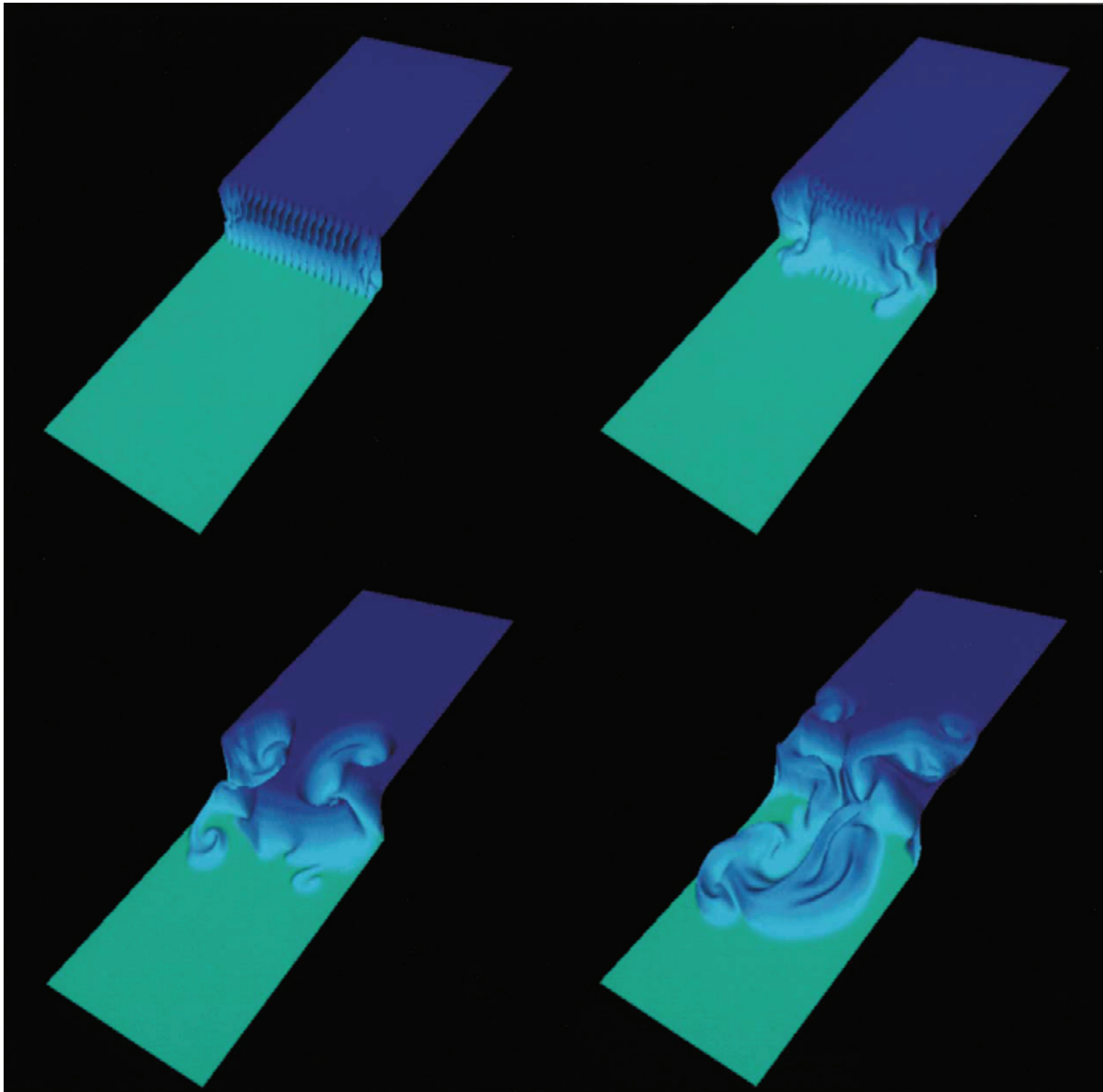


#### 4. Reyleigh-taylor Instability of Buoyancy Driven Exchange Flow

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Starting Process in buoyancy driven exchange flow is shown in this figure. The numerical simulation was carried out for Helium and Air in two-dimensional duct. The density ratio is 7.0 Rayleigh-Taylor instability dominates the starting process in this problem. It is very hard to investigate Rayleigh-Taylor instability experimentally because of lack of superior technique for gaseous interface formation. A set of motion of fluid dynamics equations was solved with SMAC type's finite difference scheme. Initially, 20 vortices were assumed as small disturbance. Initial disturbance is diffused with time and large scale vortex dominates on the flow. Exchange flow speed and rate are influenced by the vortex pattern.