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Laboratory model of non-local herricane generation[1] ALBERT SHARIFULIN, Perm State Technical University, ANATOLY POLUDNITSIN, Perm State University, ALEXANDER KRAVCHUK, Perm State Technical University —
The new physical mechanism of the non-stationary large-scale intensive cyclonic vortex origin is described on the basis of laboratory modeling. Unlike previous attempt to explain the phenomena our one does not demand presence of rotation and a local source of heat. Laboratory modeling of large-scale vortical structures formation in the atmosphere has been undertaken. The experimental results obtained are compared with numerical and analytical study of low mode models. For modeling and research of this mechanism the laboratory model, - a cubic inclined cavity fueled by air is used. Inclination is used for modeling of anomalous advective motion. Thus the origin of a cyclonic vortex is consequence of fast transition from anomalous advective motion to normal one. In process of transition from anomalous advective motion to normal one the weight of air turns as a solid body around of a vertical axis. The offered mechanism due to the symmetry conditions lead to heterogeneity of heating. In turn it may start the known mechanisms of a cyclonic vortex local excitation and self-maintenance effect increasing its lifetime.

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