

Abstract Submitted
for the DPP13 Meeting of
The American Physical Society

Drift waves and vortices: a dynamical point vortex model XAVIER LEONCINI, Centre de Physique Théorique, Aix-Marseille Université, ALBERTO VERGA, IM2NP, Aix-Marseille Université — Interactions of localized vortices with drift waves are investigated using a model of point vortices in the presence of a transverse or longitudinal wave. This simple model shows a rich dynamical behavior including oscillations of a dipole, splitting and merging of two like-circulation vortices, and chaos. The analytical and numerical results of this model have been found to predict under certain conditions, the behavior of more complex systems, such as the vortices of the Charney-Hasegawa-Mima equation, where the presence of waves strongly affects the evolution of large coherent structures.

Xavier Leoncini
Centre de Physique Théorique, Aix-Marseille Université

Date submitted: 12 Jul 2013

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