1050-35-38   **Fridolin Ting*** (`fting@lakeheadu.ca`), Department of Mathematical Sciences, Lakehead University, 955 Oliver Road, Thunder Bay, Ontario P7B 5E1, Canada. *Effective Dynamics of multi-vortices in an external potential for Ginzburg-Landau Gradient flow.* Preliminary report.

We study the dynamics of widely spaced multi-vortex configurations to the Ginzburg-Landau dissipative/gradient flow evolution equations with external potential in $\mathbb{R}^2$. We show that for initial data close to the widely spaced multi-vortex configurations, the effective dynamics of the vortex centers are governed by the inter-vortex forces and by forces due to external potential for "weak" and "strong" external potentials, respectively. (Received February 04, 2009)