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Ko-Shin Chen* (koshchen@indiana.edu), Dept. of Math., Indiana U., 831 E. Third St.,
Bloomington, IN 47405. *Ginzburg-Landau Vortices: Gradient Flow of Point Vortices on the
Sphere.*

We consider the dissipative heat flow associated with the Ginzburg-Landau energy posed on a 2-manifold \mathcal{M} . We will show that as $\varepsilon \rightarrow 0$, the vortices of the solution to this problem evolve according to the gradient flow associated with the renormalized energy. We then specialize to the case where $\mathcal{M} = \mathcal{S}^2$ and study the limiting system of ODE's and establish an annihilation result. (Received August 10, 2013)