

1042-53-3

**Duong Hong Phong\***, Columbia University. *Flows and canonical metrics in Kaehler geometry.*

We survey several non-linear heat flows in Kaehler geometry, including the Donaldson heat flow, the Kaehler-Ricci flow, and the Calabi flow. Their fixed points provide canonical metrics for the underlying geometric structure, the existence of which has been broadly conjectured by Yau to be equivalent to stability in the sense of geometric invariant theory. Particular stress is thus put on known as well as conjectural relations between the convergence of the flows and stability. (Received November 30, 2007)