Abstract: H. D. Cao introduced the Kähler-Ricci flow for canonical metrics on manifolds with definite first Chern class. In particular he obtained a new proof of Calabi’s conjecture on the existence of Kähler-Einstein metrics on manifolds with $c_1 < 0$.

More in general, the Kähler-Ricci flow is expected to provide a deeper understanding of the geometry of the underlying manifold. We will survey on some of its property and applications.