

I will discuss the recent joint work with Jixiang Fu and Zhizhang Wang. We introduce a new equation on a balanced hermitian manifold. Solving the equation enables one to settle the problem of prescribed volume form for balanced metrics on the manifold. This can be viewed as a differential form level generalization of the classical Calabi–Yau equation. We establish the existence and uniqueness of the equation on complex tori, and prove certain uniqueness and openness on a general Kähler manifold. Very recently, we are able to solve the equation on Kähler manifolds under certain curvature assumption