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TITLE. Geometric flows of Balanced metrics

ABSTRACT. An Hermitian metric g on a complex manifold (M, J) is called *balanced* if its fundamental form ω is co-closed. Typically examples of balanced manifolds are given by modifications of Kähler manifolds, twistor spaces over anti-self-dual oriented Riemannian 4-manifolds and nilmanifolds. In the talk it will be discussed two new geometric flows of balanced structures. The first of them was introduced in [1] and consists in a generalisation of the Calabi flow to the balanced context. The flow preserves the Bott-Chern cohomology class of the initial structure and in the Kähler case reduces to the classical Calabi flow. The other flow still preserves the Bott-Chern class of the initial structure but, in contrast with the first one, it is a potential flow and it does not preserve the Kähler condition.

For the both flows it will be discussed the well-posedness and the stability around Kähler-Einstein metrics.

REFERENCES

[1] L. BEDULLI, L. VEZZONI, A parabolic flow of balanced metrics. *Journal für die reine und angewandte Mathematik (Crelle)*. **723** (2017), 79–99.

[2] L. BEDULLI AND L. VEZZONI, A scalar Calabi-type flow in Hermitian Geometry, to appear in *Ann. Sc. Norm. Super. Pisa Cl. Sci. (5)*.

[3] L. BEDULLI AND L. VEZZONI, Stability of geometric flows of closed forms. `arXiv:1811.09416`.