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Conformally Kähler constant scalar curvature metrics with J-invariant Ricci tensor

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We describe a study of the metrics in the title, also called conformally Kähler, Einstein-Maxwell metrics. A main feature is the existence of an invariant of Futaki type, determined by a Kähler class, a compact group of automrophisms G with a fixed Killing field in its Lie algebra having a positive Killing potential f, and a fixed positive constant. Nonvanishing of this invariant obstructs the existence of a G-invariant Kähler metric g in the Kähler class such that g/f^2 is Einstein-Maxwell. We will discuss applications of this and related concepts in the toric case.

This is joint work with V. Apostolov.

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