Instanton bundles on the flag variety F(0,1,2)

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Abstract. Instanton bundles on $\mathbb{P}^3$ have been at the core of the research in Algebraic Geometry during the last thirty years. Motivated by the recent extension of their definition to other Fano threefolds of Picard number one, we develop the theory of instanton bundles on the complete flag variety $F := F(0, 1, 2)$ of point-lines on $\mathbb{P}^2$. After giving for them two different monadic presentations, we use it to show that the moduli space $MI_F(k)$ of instanton bundles of charge k is a geometric GIT quotient and the open subspace $MI_F^s(k) \subset MI_F(k)$ of stable instanton bundles has a generically smooth component of dim $8k - 3$. Finally we study their locus of jumping conics.

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