1147-22-496 **Ralph J. Bremigan*** (`bremigan@bsu.edu`), Department of Mathematical Sciences, Ball State University, Muncie, IN 47306-0490. *Hyperkähler structures on complexified Hermitian symmetric spaces: deformations and orbits.* Preliminary report.

In the 1980-90s, a hyperkähler structure on any complexified Hermitian symmetric space G/K was discovered, relying on identifying G/K with a coadjoint orbit $\mathcal{O}$ and with the cotangent bundle of a flag manifold.

I have found a diffeomorphism of G/K that intertwines the complex structure on $\mathcal{O}$ with almost all of the others. This yields a formula for the holomorphic action of G on G/K that extends the usual action of the compact real form G_u of G. I also have found a diffeomorphism that intertwines the real symplectic form associated to $T^*(G/Q)$ with almost all of the others.

This provides a setting to apply machinery of Heinzner, Schwarz, and Stötzel in the analysis of the actions of the real form G_0 on G/K obtained by restricting to G_0 the various holomorphic actions of G on G/K. Most of the actions have the same G_0-orbit structure as on $\mathcal{O}$, but the same moment-critical sets as on $T^*(G/Q)$, which differ from the one for $\mathcal{O}$.

I will illustrate results for SL_2. (Received January 24, 2019)