DUAL PAIRS AND KOSTANT-SEKIGUCHI CORRESPONDENCE. 
II. CLASSIFICATION OF NILPOTENT ELEMENTS

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Abstract. We classify the homogeneous nilpotent orbits in certain Lie color algebras and specialize the results to the setting of a real reductive dual pair.

For any number of a dual pair, we prove the bijectivity of the two Kostant-Sekiguchi maps by a straightforward argument. For a dual pair we determine the correspondence of the real orbits, the correspondence of the complex orbits and explain how this two relations behave under the Kostant-Sekiguchi maps. In particular we prove that for a dual pair in the stable range there is a Kostant-Sekiguchi map such that the conjecture formulated in [DKP2] holds. We also show that the conjecture cannot be true in general.

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