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The B -Orbits on a Hermitian Symmetric Variety in Characteristic 2

Let G be a reductive linear algebraic group over an algebraically closed field \mathbb{K} of characteristic 2. Fix a parabolic subgroup P such that the corresponding parabolic subgroup over \mathbb{C} has abelian unipotent radical and fix a Levi subgroup $L \subseteq P$. We parametrize the orbits of a Borel $B \subseteq P$ over the Hermitian symmetric variety G/L supposing the root system Φ is irreducible. For Φ simply laced we prove a combinatorial characterization of the Bruhat order over these orbits. We also prove a formula to compute the dimension of the orbits from combinatorial characteristics of their representatives.

Keywords: Flag variety, Bruhat order, dimension formula.

MSC: 14M15.