Zongzhu Lin* (zlin@math.ksu.edu), Department of Mathematics, Kansas State University, Manhattan, KS 66506, and Ke Ou. Geometry of the varieties of Borel subalgebras in Lie algebras of Cartan types. Preliminary report.

For the Lie algebra of a semi-simple algebraic group, the set of all Borel subalgebras form the flag variety of the algebraic group. For a restricted Lie algebra of Cartan type Lie algebras, Borel subalgebras are no longer conjugate under the automorphism groups. In the cases of type W Lie algebras, the conjugacy classes Borel subalgebras. In this talk we will describe the geometry of the varieties of all Borel subalgebras and it relations with nilpotent variety. This is a joint work with Ke Ou. (Received September 21, 2015)