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**John M. Absher\*** (jmabsher@ncsu.edu), John M. Absher, E.S. King Village, Apt. Q-222, 3930 Jackson St., Raleigh, NC 27607, and **A. Helminck** (loek@ncsu.edu), NC. *Classification of isomorphism classes of involutions of  $SO(2n,k)$* . Preliminary report.

Symmetric  $k$ -varieties are defined as the homogeneous spaces  $G/H$ , where  $H$  is the fixed point group of an involution  $\theta$  of a reductive algebraic group  $G$  defined over a field  $k$  of characteristic not 2. The classification of these symmetric  $k$ -varieties reduces to a classification of the isomorphism classes of involutions of  $G$ . In this talk we discuss the classification of these isomorphism classes of involutions in the case of the group  $G = SO(2n,k)$ . Naturally this classification depends on the field  $k$  and we will present a detailed classification for  $k$  algebraically closed, the real numbers, the  $p$ -adic numbers or a finite field. (Received February 08, 2009)