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**Nathaniel J Schwartz\*** ([nschwartz2@washcoll.edu](mailto:nschwartz2@washcoll.edu)). *On the symmetric  $k$ -varieties of orthogonal groups over fields of even characteristic.* Preliminary report.

The characterization and classification of  $k$ -involutions of algebraic groups determines much of the structure of the related symmetric  $k$ -varieties. Extending results of Dieudonné, Steinberg, and Aschbacher and Seitz and viewing the orthogonal group as a group of matrices, we describe explicitly the automorphisms of order 2. Expanding on recent results by Benim and others, for algebraically closed fields of characteristic not 2, this work substantially completes the characterization of  $k$ -involutions of orthogonal group for most fields. Symmetric  $k$ -varieties have significance in representation theory, and they also have applications in other areas of mathematics. (Received September 15, 2014)