Let $\mathfrak{g}$ be a basic simple Lie superalgebra over an algebraically closed field of characteristic zero, and $\theta$ an involution of $\mathfrak{g}$ preserving a nondegenerate invariant form. We prove that at least one of $\theta$ or $\delta \circ \theta$ admits an Iwasawa decomposition, where $\delta$ is the canonical grading automorphism $\delta(x) = (-1)^{\bar{x}}x$. The proof uses the notion of generalized root systems as developed by Serganova, and follows from a more general result on centralizers of certain tori coming from semisimple automorphisms of the Lie superalgebra $\mathfrak{g}$.

**Keywords:** Lie superalgebras, symmetric pairs, root systems.

**MSC:** 17B22, 17B20, 17B40.