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Ralph J Bremigan* (bremigan@bsu.edu), Department of Mathematical Sciences, Ball State University, Muncie, IN 47306-0490. *Adapted complex structures in Lie theory*. Preliminary report.

In the early 1990s, Guillemin-Stenzel and Lempert-Szoke introduced the notion of an “adapted” complex structure on the tangent bundle of a Riemannian manifold. We will survey several applications of these ideas, in Riemannian and semi-Riemannian contexts, in areas of current Lie-theoretic and representation-theoretic interest, including the “Akhiezer-Gindikin domain” in a complexified Riemannian symmetric space. (Received September 23, 2005)