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Brice Merlin Nguelifack* (bmn0003@auburn.edu), 316 West Glenn Ave, Auburn, AL 36830, **Huhua Liu** (xz10002@auburn.edu), 221 Parker Hall, Auburn, AL 36849, and **Tin-Yau Tam** (tamtiny@auburn.edu), 221 Parker Hall, Auburn, AL 36849. *Unitary Similarity To a Complex Symmetric Matrix And Its Extension to Orthogonal Symmetric Lie Algebra.*

Some characterizations of a square complex matrix being unitarily similar to a symmetric matrix are given. Our approach uses singular value decomposition. A result of Vermeer is extended in the context of orthogonal symmetric Lie algebra of the compact type. (Received September 11, 2011)