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**Marat V. Markin\*** (mmarkin@csufresno.edu), Department of Mathematics, California State University, Fresno, 5245 N. Backer Avenue, M/S PB 108, Fresno, CA 93740-8001. *On a Spectral Mapping Theorem for Scalar Type Spectral Operators, the Weak Spectral Mapping Theorem for and Stability of  $C_0$ -Semigroups of Such Operators.* Preliminary report.

We prove a *spectral mapping theorem* for scalar type spectral operators and apply it to extend the *weak spectral mapping theorem* and the *generalized Lyapunov stability theorem*, known to hold for the  $C_0$ -semigroups of normal operators on complex Hilbert spaces, to the more general case of  $C_0$ -semigroups of scalar type spectral operators on complex Banach spaces. We also establish for the latter an analogue of the *Gearhart-Prüss-Greiner characterization of the uniform exponential stability* for  $C_0$ -semigroups on complex Hilbert spaces. (Received February 27, 2020)