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**Marat V. Markin\***, Department of Mathematics, California State University, Fresno, 5245 N. Backer Avenue, M/S PB 108, Fresno, CA 93740-8001. *On Spectral Mapping Theorems and Asymptotics of Scalar Type Spectral  $C_0$ -Semigroups*. Preliminary report.

We establish spectral inclusion and mapping theorems for scalar type spectral operators and thereby extend a *weak spectral mapping theorem* and a *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. For such semigroups, we also obtain a spectral mapping theorem for point spectrum, exponential estimates, and an analogue of the *Gearhart-Prüss-Greiner characterization* of the uniform exponential stability for  $C_0$ -semigroups on complex Hilbert spaces. (Received February 19, 2021)