

Meeting: 1004, Bowling Green, Kentucky, SS 7A, Special Session on Semigroups of Operators and Applications

1004-47-218 **Yuriy Tomilov*** (tomilov@mat.uni.torun.pl), Chopin Str. 12/18, Department of Mathematics,
Nicholas Copernicus University, 87-100 Torun, Poland. *Stability of operator semigroups.*
Achievements and perspectives.

Especially in the last decade the asymptotic theory of one-parameter operator semigroups has attracted much attention because of its relations to applied and pure mathematics. On the one hand, C_0 -semigroups solve abstract linear Cauchy problems which often are mathematical models for problems arising in the natural and economical sciences. On the other hand, the study of asymptotics of one-parameter operator semigroups owns its interest from problems arising in operator theory, abstract harmonic analysis, complex analysis.

One of the central and most important issues of the asymptotic theory of operator semigroups is to characterize stable semigroups, that is operator semigroups with all orbits tending to zero at infinity. We present a new and unified look on the stability of operator semigroups. Our emphasis is put on the ideas and methods, both for general and concrete semigroups. (Received January 25, 2005)