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

1004-46-209 **Nicolae H Pavel*** (`npavel@math.ohiou.edu`), Ohio University, Department of Mathematics, Athens, OH 45701. *Propagation of some properties of semigroups S(t) from a neighborhood of +infinity, to a neighborhood of 0+.* Preliminary report.

Let $S(t), t \geq 0$ be a C_o semigroup of bounded linear operators on a Banach space X. It is known that some properties of $S(t)$ like compactness for $t = T > 0$, propagates to any $t > T$, i.e. $S(T)$ compact implies $S(t)$ compact for all $t > T$.

Here we point out some properties of $S(t)$ for t in a neighbourhood of $+\infty$, which propagates to all t near 0. For example, if the range $R(I - S(T))$ is closed, then $R(I - S(T/n))$ is closed for all positive integers $n > 1$

Applications to periodic solutions of abstract differential equations associated with semigroup generators are given. (Received January 24, 2005)