1167-46-18 **Sven A. Wegner*** (`sven.wegner@uni-hamburg.de`), Universität Hamburg, Bundesstraße 55, 20146 Hamburg, Germany. *Asymptotics of strongly continuous semigroups beyond Banach spaces.*

In this talk, different concepts of stability for strongly continuous semigroups on locally convex spaces will be introduced. For barrelled resp. Baire spaces we will show that—similar to the Banach space case—several of these notions coincide in general. Also, under mild assumptions on the semigroup, a Datko-Pazy type theorem holds true.

On the other hand, even for (nuclear) Fréchet spaces, not all classical characterizations, carry over. As an example, we will present a multiplication semigroups on the space of rapidly decreasing sequences which decays faster than every polynomial without decaying exponentially fast—an effect impossible on a Banach space. (Received January 23, 2021)