**Possible topics of minitalks to: "Hilbert modules and their applications"**
**Michael Skeide**

The talks are good for 4.5 Credit Points, unless indicated by "(Long)".
"(Potentially long)" means the talk is suitable for both, depending on the degree of elaboration.
Sometimes, the long version of "(potentially long)" can be split into two minitalks.

1. (Potentially long.)

   Characteristic functions (of probability measures; functions indicating membership to a set, we call ***indicator functions***) and convolution semigroups and PD-kernels. (If long, then also representations of Lèvy processes on the Fock space and/or Arveson's result that type I Arveson systems are Fock.)

2. (Potentially long.)

   Elaborate version of Example 3 from the introduction. (Classification of unital endomorphism semigroups on unital algebras by one-dimensional product systems of bimodules up to cocycle conjugacy. This is entirely algebraic, no $C^*$–algebras or Hilbert modules. If long, then relation with $E_0$–semigroups on $\mathcal{B}^a(E)$ and product systems of correspondences.)

3. Problem 6 in "Other Problems". (Direct sums.)

4. Problem 13 in "Other Problems". (The bounded right linear maps $\mathcal{B}^{\mathrm{n}} \to \mathcal{B}$ and $\mathcal{B}^\infty$ is, usually, not self-dual.) (Can be joint with the preceding, to a give a long talk.

5. Problem 7 in "Other Problems" and the relation of closed left ideals with heriditary subalgebras of a $C^*$–algebra.

6. (Potentially long.)

   The structure of finite-dimensional Hilbert modules and correspondences. (If long, then with tensor products of finite-dimensional correspondences.)

(To be continuously updated ....)