We will continue on Thursday, **October 3, in M5 at 1pm** by the talk

**P. Arndt**

**Ranges of functors and geometric elementary classes**

Abstract:
Given first order theories S,T and a functor F:Mod(S)-->Mod(T) between their categories of models, one can ask whether objects in the image of F satisfy first order sentences other than those of T, or whether the essential image of F can be described as Mod(T') for an extension T' of T. If Mod(S), Mod(T) are k-accessible and F is a strongly k-accessible functor for some cardinal k, we can give criteria for this in the realm of Espíndola's k-geometric first order theories.
To this end we consider k-classifying toposes associated to S and T. The hypotheses ensure that the functor F is induced by a k-geometric essential morphism between them. The criteria are then obtained by factorizing this geometric morphism appropriately. We will explain the involved notions and give examples and applications.