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Stability properties for n -permutable categories

The purpose of this talk is two-fold. A first and more concrete aim is to characterise n -permutable categories through certain stability properties of regular epimorphisms. These characterisations allow us to recover the ternary terms and the $(n + 1)$ -ary terms describing n -permutable varieties of universal algebras.

A second and more abstract aim is to explain two proof techniques, by using the above characterisation as an opportunity to provide explicit new examples of their use:

- an *embedding theorem* for n -permutable categories which allows us to follow the varietal proof to show that an n -permutable category has certain properties;
- the theory of *unconditional exactness properties* which allows us to remove the assumption of the existence of colimits, in particular when we use the *approximate co-operations* approach to show that a regular category is n -permutable.

*Joint work with Pierre-Alain Jacqmin.