A criterion for reflectiveness of normal extension with an application to monoids

Andrea Montoli

CMUC, University of Coimbra, Portugal

We prove that the so-called special homogeneous surjections are reflective amongst surjective homomorphisms of monoids. To do so, we use the result that these special homogeneous surjections are the normal (= central) extensions with respect to the admissible Galois structure G determined by the Grothendieck group adjunction together with the classes of surjective homomorphisms. It is well known that such a reflection exists when the left adjoint functor of an admissible Galois structure preserves all pullbacks of fibrations along split epimorphic fibrations, a property which we show to fail for the Galois structure G. We give a new sufficient condition for the normal extensions in an admissible Galois structure to be reflective, and we then show that this condition is indeed fulfilled by G.

(Joint work with Diana Rodelo and Tim Van der Linden.)