Normalizers in the non-pointed context

Dominique Bourn

The aim of this work is to point out a structural phenomenon hidden behind the existence of normalizers through the investigation of this property in the non-pointed case: given any category $\mathbb{E}$, a certain property of the fibration of points $\P_{\mathbb{E}} \colon Pt(\mathbb{E}) \to \mathbb{E}$ guarantees the existence of normalizers. This property becomes a characterization of this existence when $\mathbb{E}$ is quasi-pointed and protomodular. This property is also showed to be equivalent to a property of the category $Grd\mathbb{E}$ of internal groupoids in $\mathbb{E}$ which is a kind of dual, for the monomorphic internal functors, of the comprehensive factorization.