

G.C.L. Brümmer, E. Giuli
A categorical concept of completion of objects

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Abstract: We introduce the concept of firm classes of morphisms as basis for the axiomatic study of completions of objects in arbitrary categories. Results on objects injective with respect to given morphism classes are included. In a finitely well-complete category, firm classes are precisely the coessential first factors of morphism factorization structures.

Keywords: firm reflection, (sub-)firm class, injective object, (co)-essential morphism

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