A categorical approach to partial group actions

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Partial group actions have been studied in the literature over several kinds of structures, such as sets, topological spaces, rings, algebras, among others. Roughly speaking, they deal with symmetries of parts of an object, which may not be captured by global actions.

In our work, which was inspired by [1,2], we give an unified categorical approach to the study of partial group actions by generalizing them to act on objects in arbitrary categories with pullbacks. In this talk, I will speak about the connection of the thus defined partial actions with inverse semigroups and about their globalizations.

1 J. Hu, J. Vercruysse, *Geometrically Partial Actions*. Trans. Amer. Math. Soc. 373 (2020), 4085–4143

2 P. Saracco, J. Vercruysse, *Globalization for geometric partial comodules*. J. Algebra 602 (2022), 37–59