

# On the categorical behaviour of ordered, metric, and topological groups

Maria Manuel Clementino<sup>1</sup>,

<sup>1</sup> Centre for Mathematics, University of Coimbra (CMUC)

We will present common categorical facets of groups equipped with compatible structures and their corresponding homomorphisms. We focus mainly on the study of (pre)ordered groups as a starting point to a more general approach to quantale-enriched groups, which includes metric, ultrametric, and probabilistic metric groups.

This talk is based on joint work with F. Borceux [1, 2], N. Martins-Ferreira and A. Montoli [3, 4], and ongoing work with D. Hofmann.

## References

- [1] BORCEUX, F., CLEMENTINO, M.M., *Topological semi-abelian algebras*, Adv. Math. 190, 425–453 (2005).
- [2] CLEMENTINO, M.M., *An invitation to topological semi-abelian algebras*, in: Coimbra Mathematical Texts, Volume 1 (to appear), Springer (2021).
- [3] CLEMENTINO, M.M., MARTINS-FERREIRA, N., MONTOLI, A., *On the categorical behaviour of preordered groups*, J. Pure Appl. Algebra 223, 4226–4245 (2019).
- [4] CLEMENTINO, M.M., MONTOLI, A., *On the categorical behaviour of  $V$ -groups*, J. Pure Appl. Algebra 225, 106550 (2021).