

Fernando Lucatelli Nunes\*

University of Coimbra

*Descent and Monadicity*

In [3], given a 2-category  $A$ , under suitable hypotheses, we give the semantic factorization of a morphism  $p$  that has the codensity monad via descent. This specializes to a new connection between monadicity and descent theory, which can be seen as a counterpart account to the celebrated Bénabou-Roubaud Theorem [1]. It also leads in particular to a (formal) monadicity theorem.

The result is new even in the case of the Eilenberg-Moore factorization of a functor that has a left adjoint in  $\mathbf{Cat}$ . In this talk, we shall give a sketch of the ideas and constructions involved in this particular case. We give focus on the monadicity theorem. If time allows, we talk about applications in the context of [2, 4].

References:

- [1] J. Bénabou and J. Roubaud, Monades et descente, *C. R. Acad. Sci. Paris Sr. A-B* 270 (1970) A96-A98.
- [2] F. Lucatelli Nunes, Pseudo-Kan Extensions and Descent Theory, *Theory and Applications of Categories* 33 (2018), no. 15, pp 390-444.
- [3] F. Lucatelli Nunes. Semantic Factorization and Descent. *DMUC preprints 2019 (CMUC)* DMUC 19-03.
- [4] G. Janelidze and W. Tholen. Facets of Descent I, *Applied Categ. Structures* 2 (1994), no.3, 245-281.

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\*lucatellinunes@uc.pt