

On étale algebraic homomorphisms

Maria Manuel Clementino *

In the category **CompHaus** of compact Hausdorff spaces and continuous maps, a map is exponentiable if, and only if, it is étale (see [1]). Briefly, to prove that étale continuous maps between compact Hausdorff spaces are exponentiable, Cagliari and Mantovani build exponentials in the quasitopos of pseudotopological spaces and show that the exponentials belong to **CompHaus** whenever the map is étale. Using techniques developed in the study of lax algebras (see [4, 2, 3]), this can be generalized to any category $\mathbf{C}^{\mathbb{T}}$ of Eilenberg-Moore algebras for a monad \mathbb{T} on **Set** satisfying the Beck-Chevalley condition (BC). Indeed, every such category can be embedded in a quasi-topos and it can be shown that exponentials of étale algebraic homomorphisms belong to $\mathbf{C}^{\mathbb{T}}$. In this talk I will outline this proof and discuss the role of (BC) in this context.

REFERENCES

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