

# Enriched Hausdorff and Vietoris functors

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Motivated by Nachbin's notion of ordered topological space [1], in this talk we combine quantale enriched categories and topology [2]. Besides studying some basic properties of these categories, we investigate functors which simultaneously encode the classical Hausdorff metric and Vietoris topology. In particular, we consider

- completeness properties (Cauchy, Smyth and Yoneda completeness) of these hyper spaces, and
- completeness properties of the corresponding categories of coalgebras.

## References

- [1] L. NACHBIN, *Topology and Order*, vol. 4 of Van Nostrand Mathematical Studies, D. Van Nostrand, Princeton, N.J.-Toronto, Ont.-London, 1965. Translated from the Portuguese by Lulu Bechtolsheim.
- [2] W. THOLEN, *Ordered topological structures*, *Topology and its Applications*, 156 (2009), pp. 2148–2157.