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*Monoidal Grothendieck Construction*

In this talk, we will describe how the classic correspondence between fibrations and indexed categories, i.e. pseudofunctors into  $\mathbf{Cat}$ , extends naturally to one between monoidal fibrations and monoidal pseudofunctors. This result reduces and compares to Shulman's equivalence for indexed monoidal categories [1] when the monoidal base is cocartesian. Examples of interest include Turaev's and Zunino's categories [2], network models [3] as well as the well-known forgetful functor  $\mathbf{Grph} \rightarrow \mathbf{Set}$ . The latter serves as a motivating example for an eventual purpose: connecting two different categorical frameworks for networks, namely *decorated* [4] and *structured* cospans.

REFERENCES:

- [1] Michael Shulman, Framed bicategories and monoidal fibrations, *Theory and Applications of Categories*, 20: 18 (2008) 650–738.
- [2] S. Caenepeel and M. De Lombaerde, A categorical approach to Turaev's Hopf group-coalgebras, *Journal of Commutative Algebra* 34(7) (2006) 2631–2657.
- [3] John Baez, John Foley, Joseph Moeller, and Blake Pollard, Network models, arXiv:1711.00037 [math.CT] (2017).
- [4] Brendan Fong, Decorated cospans, *Theory and Applications of Categories* 30: 33 (2015) 1096–1120.

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