

# A generalized Blakers-Massey Theorem

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(joint with M. Anel, E. Finster, and A. Joyal)

We present a generalized version of the Blakers-Massey Theorem in the context of  $\infty$ -topoi. The proof refines a proof of the classical theorem by Finster and Lumsdaine given in the language of Homotopy Type Theory and its “re-engineered” version by Rezk. The main tools are certain factorization systems (modality) and homotopical descent. The classical theorem and a recent generalization due to Chacholski-Scherer-Werndli are easy consequences.

As an application we prove a conjecture by Goodwillie: a Blakers-Massey Theorem for the calculus of homotopy functors. From it we obtain an independent proof of the fact that homogeneous functors deloop.

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