

Elementary introduction to pasting

Fernando Lucatelli Nunes

The operation of pasting of 2-cells is part of the foundations of 2-category theory [4]. It was introduced by Bénabou in [1] and, then, further explored by Kelly and Street [2]. However its associative property, fundamental aspect that makes it useful to prove theorems, was not proved (or even properly stated) before [4].

The main purpose of the talk is to give some elementary aspects of pasting, giving examples within basic category theory in order to motivate its day-to-day use even in 1-dimensional category theory. These examples intend to demonstrate that, once we assume pasting is well-defined, pasting gives nice ways of understanding and dealing with proofs diagrammatically. For instance, the whiskering and interchange law come for free in proofs using pasting of 2-cells.

If time permits, we finish giving a brief discussion on results that gives another perspective on the well definition/associativity of the operation pasting, relating it with presentation of 2-categories, deficiency of presentations and, hence, topology [3].

References

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- [3] F. Lucatelli Nunes. Freely generated n-categories, coinserters and presentations of low dimensional categories. Arxiv: 1704.04474.
- [4] A.J. Power. A 2-categorical pasting theorem. *Journal of Algebra* 129, 439–445, 1990.