

A CONSTRUCTION OF 2-FILTERED BICOLIMITS OF CATEGORIES WITH 2-FIBRATIONS

by Matias I. DATA

Abstract

In this talk we give a novel construction of 2-filtered bicolimits of categories. This bicolimits have been studied previously by E. Dubuc and R. Street, who gave a nice construction of the bicolimit similar to the construction by Grothendieck in the case of a filtered bicolimit of categories. We work with the theory of 2-fibrations, developed by Hermida, Bakovic and Buckley, we develop the concept of 2-discrete 2-fibration, which corresponds to 2-functors from a 2-category to $\mathcal{C}at$. Using this theory and the construction of the bicategory of fractions by D. Pronk, we show that the construction by Grothendieck can be generalized to the 2-categorical case. We compare this construction with the one given by Dubuc and Street, and show that it is essentially the same. Finally, we comment some applications of this construction in topos theory. This work was part of my master's thesis, under the direction of E. Dubuc.