Free constructions on double categories

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In the process of constructing various model structures on the 2-category **DblCat** of double categories, we need various free constructions into **DblCat**, as well as some special pushouts of double categories, which turn out to have nice descriptions. I will discuss the horizontal and the double categorification, and a nice presentation for the free double category on a double derivation scheme, which extends the construction of a free double category on a double graph as described by Dawson and Pare [1].

REFERENCES

[1] R.J.M. Dawson, R. Paré, *What is a free double category like?* J. Pure Appl. Algebra 168 (2002) 19-34.