

Finiteness conditions and closure properties for the box-tensor product of groups

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The non-abelian tensor product $G \otimes H$ of groups G and H was introduced by Brown and Loday [1] following works of Miller and Dennis. Later, the box-tensor product $G \boxtimes H$ was introduced by Ladra and Thomas as a generalization of the non-abelian tensor product of groups. In [2], the authors showed the finiteness of the box-tensor product $G \boxtimes H$ when both G and H are finite.

In this talk we will describe results concerning the finiteness conditions and closure properties for the box-tensor product which extend results for the non-abelian tensor product. Moreover, we will present finiteness conditions for some functors that arise out of the non-abelian tensor square of groups.

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References

- [1] R. Brown and J.-L. Loday, *Van Kampen theorems for diagrams of spaces*, *Topology* **26** (1987) pp. 311–335.
- [2] M. Ladra and V.Z. Thomas, *Two generalizations of the non-abelian tensor product*, *J. Algebra* **369** (2012) pp. 96–113.