

1154-18-2470 **Michael Horst*** (horst.59@osu.edu). *A Categorification of Group Cohomology*. Preliminary report.

We present a categorification of group cohomology by way of Picard categories, which are to be thought of as categories that behave like Abelian groups. After reviewing background information on Picard categories, we will present a construction for free Picard categories generated by groupoids and will do so by using a tensoring over groupoids to demonstrate the appropriate free-forgetful adjunction. We continue by discussing the framework for this cohomology of Picard categories, including categorical modules and derived functors. We will close by using free Picard categories to form projective resolutions and compute various specific examples. (Received September 17, 2019)