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**Adam M Glesser\*** (aglesser@fullerton.edu). *Mackey functors and sharpness for fusion systems*. Preliminary report.

By recent work of Chermak, we can associate a classifying space—a topological construction that behaves, homotopically, like the  $p$ -completed classifying space of a finite group—to any saturated fusion system  $\mathcal{F}$  on a finite  $p$ -group  $S$ . There is a way of studying this classifying space of  $\mathcal{F}$  by gluing together classifying spaces  $BP$ , where  $P$  runs over the collection of subgroups of  $S$  that are  $\mathcal{F}$ -centric. For fusion systems of finite groups, i.e., for  $\mathcal{F} = \mathcal{F}_S(G)$  with  $G$  a finite group containing  $S$  as a Sylow  $p$ -subgroup, this homological decomposition possesses a further feature called *sharpness*. Sharpness, which was studied and verified for the fusion system of a finite group by Dwyer, means that a certain spectral sequence arising from the above decomposition collapses onto the vertical axis. In other words, certain higher limits, arising naturally from this context, vanish. In this preliminary report, the authors explore sharpness for fusion systems, utilizing a fusion system analogue of Mackey functors. We conjecture that the higher limits vanish for all fusion systems, and prove the conjecture for  $p$ -groups of  $p$ -rank 2 for  $p$  odd. (Received September 25, 2012)