1120-47-13 **Timothy Rainone** (trainone@uwaterloo.ca), Pure Mathematics, University of Waterloo, 200 University Avenue West, Waterloo, Ontario N2L 3G1, Canada, and **Christopher Schafhauser*** (cschafha@uwaterloo.ca), Pure Mathematics, University of Waterloo, 200 University Avenue West, Waterloo, Ontario N2L 3G1, Canada. *Crossed products of nuclear C*-algebras by free groups.*

Following the work of N. Brown, we define the notion of an MF trace on a C*-algebra in terms of approximately trace-prerving representations on finite dimensional matrix algebras. We have shown that if A is an A$\mathbb{T}$-algebra of real rank zero and F is a free group acting on A, then every trace on $A \rtimes_r F$ is MF. Combining this with recent results in classification, yields some structural results for free group actions on many simple, nuclear C*-algebras. In particular, we characterize when the crossed products formed by these actions are MF in the sense of Blackadar and Kirchberg.

As a consequence, if G is a semi-direct product of an amenable group by a free group, then the group C*-algebra $C_r^*(G)$ is MF and the group von Neumann algebra $L(G)$ satisfies Connes's Embedding Problem. (Received January 12, 2016)