1059-46-173 **Don Hadwin*** (don@unh.edu), MATH DEPT UNH, Durham, NH 03824, and **Qihui Li**, **Weihua Li** and **Junhao Shen**. *A Lower Bound for Topological Free Entropy Dimension.* Preliminary report.

Suppose $\mathcal{A} = \mathcal{C}^*(x_1 \ldots, x_n)$ is an MF-C*-algebra in the sense of Balackadar and Kirchberg. We define a family of traces, called *MF-traces*, on $\mathcal{A}$ in a natural way from the definition of MF-algeba. We prove that the set of MF-traces on $\mathcal{A}$ is nonempty, compact and convex. Suppose τ is an MF-trace on $\mathcal{A}$ and π is the corresponding GNS representation, and suppose X is a selfadjoint operator in $\pi(\mathcal{A})''$. Then the topological free entropy dimension $\delta_{\text{top}}(x_1, \ldots, x_n)$ is no less than the free entropy dimension of X with respect to τ. If $\mathcal{A}$ has no finite-dimensional representation or infinitely many inequivalent finite-dimensional representations, then $\delta_{\text{top}}(x_1, \ldots, x_n) \geq 1$. Let $\mathcal{J}$ be the largest ideal annihilated by all the MF-traces. If $\mathcal{A}/\mathcal{J}$ is finite-dimensional or if $\mathcal{A}$ is nuclear and every trace on $\mathcal{A}$ is an MF-trace, then $\delta_{\text{top}}(x_1, \ldots, x_n) = 1 - 1/d$, where $d = \dim \mathcal{A}/\mathcal{J}$. (Received February 22, 2010)