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**Isaac Goldbring\*** ([isaac@math.uci.edu](mailto:isaac@math.uci.edu)), Department of Mathematics, University of California, Irvine, Irvine, CA 92697. *On the  $II_1$  factor  $\mathcal{E}$ .*

I will introduce a separable  $II_1$  factor called  $\mathcal{E}$ . The talk will concern two main questions: Does  $\mathcal{E}$  exist? If so, is  $\mathcal{E}$  isomorphic to the separable hyperfinite  $II_1$  factor? A positive answer to both of these questions is equivalent to a positive answer to the Connes Embedding Problem. The study of  $\mathcal{E}$  has its origins in the model-theoretic notion of building models by games which I will discuss as well. (Received August 22, 2017)