

1096-03-199

**Joel David Hamkins\*** ([jhamkins@gc.cuny.edu](mailto:jhamkins@gc.cuny.edu)), The CUNY Graduate Center, Mathematics, 365 Fifth Avenue, New York, NY 10016. *Embeddability amongst the countable models of set theory.*

A surprisingly vigorous embeddability phenomenon has recently been uncovered amongst the countable models of set theory. In particular, embeddability is linear: for any two countable models of set theory, one of them is isomorphic to a submodel of the other. Indeed, every countable model of set theory, including every well-founded model, is isomorphic to a submodel of its own constructible universe, so that there is an embedding  $j : M \rightarrow L^M$  for which  $x \in y \iff j(x) \in j(y)$ . The proof uses universal digraph combinatorics, including an acyclic version of the countable random digraph, which I call the countable random  $\mathbb{Q}$ -graded digraph, and higher analogues arising as uncountable Fraïssé limits, leading to the hypnagogic digraph, a set-homogeneous, class-universal, surreal-numbers-graded acyclic class digraph, closely connected with the surreal numbers. Commentary concerning this talk can be made on my blog at <http://jdh.hamkins.org/plenary-talk-asl-jmm-baltimore-january-2014/>. (Received August 15, 2013)