

End-extending models of arithmetic using Ramsey principles

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An end-extension of a model of arithmetic is an extension in which all new elements are bigger than the old ones. To build an end-extension of a model M , one needs to prevent new elements from being inserted between members of M . In model theoretic terminology, one has to ensure that certain types are omitted in the extension. Gaifman (and independently others) showed that the Infinite Ramsey Theorem, formalized in a suitable language, can be used to omit such types. I will report on some recent attempts to generalize this to stronger Ramsey-type theorems at the level of \mathbf{ATR}_0 or above.