Roman Kossak* (rkossak@gc.cuny.edu), Mathematics Ph.D. Program, The CUNY Graduate Center, 365 Fifth Avenue, New York, NY 10016. Elementary pairs of models of PA.

It is not a big exaggeration to say that most of model theory of arithmetic concerns pairs of the form \((M, K)\), where \(K \prec M\). It would be a much too ambitious project to attempt any general classification of all such pairs, but some interesting restricted cases have been successfully studied. Much is known about the case where \(M\) is a countable recursively saturated elementary end extension of \(K\). With small exceptions, the isomorphism type of \((M, K)\) for such pairs can be recovered from the structure \((K, \text{Cod}(M/K))\), where \(\text{Cod}(M/K)\) is the collection of those subsets of \(K\) which are coded in \(M\). In the talk I will briefly survey the elementary end extension case, and I will report on the less explored case of cofinal extensions. This last topic is joint work with Henryk Kotlarski. (Received August 03, 2008)