Lex colimits

Richard Garner [*]

Abstract. Amongst the range of structures it has been found mathematically useful to impose upon a category, we find a number which share the following form. There are required the provision of finite limits, of colimits from some specified class, and of certain compatibilities—or "exactnesses"—between the finite limits and the specified colimits. We are thinking, for example, of the notions of regular, or Barr-exact, or lextensive, or adhesive, or coherent, or geometric category. In this talk, we account for these similarities of form by exhibiting each of the structures in question as instances of one common notion—that of cocompleteness with respect to a class of colimits "in the left exact world".