Relations, residuals, regular interiors, and relative regular equivalence
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Given the relation (and an equivalence relation (, both on the same set of individuals, it is interesting to look for the largest equivalence ((that is contained in and is regular with respect to (. The computation of ((involves the left and right residuals, a concept that generalized group inverses to the algebra of relations. A polynomial-time procedure is presented and illustrated with examples. In particular, the regular interior gives meet in the lattice of regular equivalences: the regular meet of regular equivalences is the regular interior of their intersection. Finally, the concept of relative regular equivalence is defined and compared with regular equivalence.