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Wei He, Yueshi Qin and Rongwei Yang* (ryang@albany.edu). *Numerical invariants of commuting isometric pairs*. Preliminary report.

Tuples of commuting isometries are fundamental examples for multivariable operator theory. Two related single operators, namely fringe (or pivotal) operator and defect operator, play important roles in the study of isometric pairs. The defect operator gives rise to a new equivalence relation, namely congruence, for isometric pairs. The congruence relation is much less rigid than the unitary equivalence, and hence possesses flexibility for a numerical classification of isometric pairs. (Received August 27, 2013)