Aggregations Preserving Classes of Fuzzy Relations

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Abstract: We consider aggregations of fuzzy relations using means in [0,1] (especially: minimum, maximum and quasilinear mean). After recalling fundamental properties of fuzzy relations we examine means, which preserve reflexivity, symmetry, connectedness and transitivity of fuzzy relations. Conversely, some properties of aggregated relations can be inferred from properties of aggregation results. Results of the paper are completed by suitable examples and counterexamples, which is summarized in a special table at the end of the paper.