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On the quantification of uniform properties

Comment.Math.Univ.Carolinae 38,4 (1997) 749-759.

Abstract: Approach spaces ([4], [5]) turned out to be a natural setting for the quantification of topological properties. Thus a measure of compactness for approach spaces generalizing the well-known Kuratowski measure of non-compactness for metric spaces was defined ([3]). This article shows that approach uniformities (introduced in [6]) have the same advantage with respect to uniform concepts: they allow a nice quantification of uniform properties, such as total boundedness and completeness.

Keywords: uniform space, approach uniform space, totally bounded, precompact, complete, measure of total boundedness, measure of completeness

AMS Subject Classification: 54E15, 54B30, 54E35