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proximity generated by uniformity

Canonical name	ProximityGeneratedByUniformity
Date of creation	2013-03-22 16:56:20
Last modified on	2013-03-22 16:56:20
Owner	porton (9363)
Last modified by	porton (9363)
Numerical id	9
Author	porton (9363)
Entry type	Definition
Classification	msc 54E17
Classification	msc 54E15
Classification	msc 54E05
Defines	uniform proximity

Definition. Let X be a uniform space with uniformity \mathcal{U} . The *uniform proximity*, or *proximity generated by \mathcal{U}* , is a binary relation δ on the subsets of X , given by the formula

$$A \delta B \quad \Longleftrightarrow \quad \forall U \in \mathcal{U} : U \cap (A \times B) \neq \emptyset.$$

Correctness of the above proximity is given by the below theorem:

Theorem. Proximity generated by a uniformity is a proximity. In other words, X is a proximity space with proximity δ .