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pseudometric space

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Defines	pseudometric
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A *pseudometric space* is a set  $X$  together with a non-negative real-valued function  $d : X \times X \longrightarrow \mathbb{R}$  (called a *pseudometric*) such that, for every  $x, y, z \in X$ ,

- $d(x, x) = 0$ .
- $d(x, y) = d(y, x)$
- $d(x, z) \leq d(x, y) + d(y, z)$

In other words, a pseudometric space is a generalization of a metric space in which we allow the possibility that  $d(x, y) = 0$  for distinct values of  $x$  and  $y$ .

## References

- [1] L.A. Steen, J.A. Seebach, Jr., *Counterexamples in topology*, Holt, Rinehart and Winston, Inc., 1970.