



Why

We talk about sequences in a metric space which are “bunching up.”

Definition

A sequence in a metric space is *egoprox* (or *Cauchy*) if for every positive real number, there exists a final part of the sequence so that any two terms are less than the positive number apart.¹

Notation

Let (X, d) be a metric space. Then $(x_n)_{n \in \mathbf{N}}$ a sequence in X is egoprox if, for every $\varepsilon > 0$, there exists $N \in \mathbf{N}$ so that, for all $m, n \geq N$

$$d(x_n, x_m) < \varepsilon.$$

¹The term Cauchy is universal, but in accordance with the Bourbaki project’s guidelines on naming, we will tend to use the term complete inner product space, even though this is longer.

