

SPACE DISTANCE

Why

What is the distance between two points in space?

Definition

We define the distance between two points in space as the length of the line segment connecting them. In terms of their coordinates $(x_1, x_2, x_3), (y_1, y_2, x_3) \in \mathbb{R}^3$, the *space distance* of two points is

$$\sqrt{(x_1-y_1)^2+(x_2-y_2)^2+(x_3-y_3)^2}$$
.

This is sometimes referred to as the *Euclidean distance*. We have thus defined a function mapping $\mathbb{R}^3 \times \mathbb{R}^3$ into \mathbb{R} .

