



Definition

The *projection* of $x \in \mathbf{R}^n$ onto the subset $S \subset \mathbf{R}^n$ is the point in S closest to x .

Notation

We sometimes the projection of x onto S by $\text{proj}_S(x)$. We have

$$\text{proj}_S(x) = \underset{z \in S}{\operatorname{argmin}} \|x - z\|$$

