Projectors

Definition: a projector p is a linear application such that:

(i) There exists a decomposition of the initial set in two supplementary sets:

$$E = F \oplus G$$

$$p : E \to F$$

$$x = x_F + x_G \to x_F$$

G is the "projection direction" Also, $F = Im(p)$ and $G = Ker(p)$

(ii) p is *idempotent*:

$$p \circ p = p$$

Intuitively, it means that applying p a second time doesn't change anything.

Definition (bis) : a square matrix P is called a projection matrix if it is equal to its square, i.e. if $P^2 = P$.

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