Orthogonal Projection May 8, 2021

1 | Axler6.53 orthogonal projection, \mathcal{P}_U def

Suppose U is a finite-dimensional subspace of V. The *orthogonal projection* of V onto U is the operator $P_U \in \mathcal{L}(V)$ defined as follows:

For $v \in V$, write v = u + w, where $u \in U$ and $w \in U^{\perp}$. Then $P_U v = u$.

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