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A Relation Between Exposed Points and Extremal Points of Convex Sets

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Let V be a Euclidean space or the Hilbert space consisted of square summable sequences. Let k be a natural number with $k < \dim V$, let B be convex and closed in V and let P be a collection of linear k-subspaces of V. A set C in V is called a *P-imitation* of B if B and C have identical orthogonal projections along every p in P. An *extremal* point of B with respect to the projections under P is a point that all closed subsets of B that are P-imitations of B have in common. A point x of B is called *exposed* by P if there is a p in P such that $x + p$ and B have in common only x.

The main result we present is that all extremal points are limits of sequences of exposed points whenever$P$ is open.

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