

Compact and Finite Rank Perturbations of Linear Relations

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For closed linear operators or relations A and B acting between Hilbert spaces \mathcal{H} and \mathcal{K} the concepts of compact and finite rank perturbations can be defined with the help of the orthogonal projections P_A and P_B in $\mathcal{H} \oplus \mathcal{K}$ onto A and B . We discuss some equivalent characterizations for such perturbations and we show that these notions are natural generalizations of the usual concepts of compact and finite rank perturbations.