Compact perturbations of linear bounded operator that preserve spectral continuity

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For an infinite dimension Banach space X, with $B(X)$ we denote the algebra of all linear bounded operator on X and $K(X)$ the ideal of all compact operators. For $T \in B(X)$, let $\sigma(T)$ be the spectrum of T, $\sigma_p(T)$ set of all eigenvalues of T, and $\pi_0(T)$ the set of all isolated eigenvalues of finite geometric multiplicity.

The perturbation of an operator by compact operators is usual technic in areas of operators equations. Our interest is finding such compact operators that the continuity of the spectrum move from T to $T + K$, $T \in B(X)$ and $K \in K(X)$. Moreover, it is given condition that isolated points in $\sigma_p(T)$ with finite geometrical or algebraic dimension still are like that in $\sigma(T + K)$ or out of the spectrum.

The talk is based on a joint work with S. Sánchez-Perales.