Perturbation analysis of canonical forms

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Consider selfadjoint and unitary linear transformations with respect to indefinite inner products in finite dimensional complex vector spaces. Such transformations have well known canonical forms. The talk will focus on the behavior of these forms under several types of small perturbations in the transformations. Of particular interest are structure preserving changes. Several recent results concerning structure preserving perturbations are presented, including persistence of the sign characteristig and the Lipschitz property of canonical bases. As an application, Lipschitz properties of invariant subspaces with various definiteness conditions are established.