

A proof of the Box Conjecture for commuting pairs of matrices

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We will review some of the work on commuting pairs of matrices that led to the Box Conjecture of Anthony Iarrobino and his collaborators. Then, we will sketch a proof of the Conjecture. The proof hinges naturally on the Burge correspondence between the set of all partitions and a set of binary words. For connection with the algebraic and geometric setup of matrices and nilpotent orbits we use Shayman's results on invariant subspaces of a nilpotent matrix. This is joint work with John Irving and Mitja Mastnak.