The Kernel Structure of Rectangular Hankel and Toeplitz Matrices

Martin H. Gutknecht

ETH Zurich, Switzerland

The null spaces of square and rectangular moment matrices (or, equivalently, of Hankel and Toeplitz matrices) play a role in several applications, e.g., Padé approximation, stable Padé approximation, and signal processing. Here we describe the structure of a special basis of these null spaces. In contrast to the treatment in the book by Heinig and Rost, our argumentation is based on the link to Padé approximation.