

A tutorial on Padé approximation, with applications to control

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Abstract

The Padé approximants are rational functions whose series expansion in ascending powers of the variable agrees with a given series as far as possible. They can be understood as formal Gaussian quadratures. Their construction and their algebraic properties will be explained. A method for estimating their error will be presented. Some convergence results will be given. The discovery of Padé approximants will be described and the life and work of Padé will be depicted. Finally, applications of Padé approximants to linear control will be presented.
