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CIDMA
CENTRO DE I&D EM MATEMÁTICA E APLICAÇÕES
CENTER FOR R&D IN MATHEMATICS AND APPLICATIONS

SEMINAR

Grupo de Análise Funcional e Aplicações
Functional Analysis and Applications Group

Adjoint Differentiation for generic matrix functions

Evgeny Lakshtanov
CIDMA - Universidade de Aveiro

Abstract

We present a formula for the adjoint of a square-matrix operation of the form $f(A)$, where f is holomorphic in the neighborhood of each eigenvalue. We consider special cases such as the spectral decomposition $A = UDU^{-1}$ and the spectrum cut-off $f(A) = A_+$ for symmetric A. We then apply the formula to derive closed-form expressions in particular cases of interest to quantitative finance such as the Nearest Correlation Matrix routine and regularized linear regression.

Room *11.2.6*
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