

# Majorization, $\mathcal{A}(R, S)$ and related matrix classes

Geir Dahl

*Department of Mathematics and Department of Informatics, CMA  
University of Oslo, Norway  
(geird@ifi.uio.no)*

## Abstract

The notion of majorization plays an important role in matrix theory and several other mathematical areas, like combinatorics, probability, statistics, operator theory and physics. The basic notion is an ordering of vectors according to their partial sums, but several extensions exist. The purpose of this talk is to give a brief introduction to majorization theory and some of its connections to certain classes of matrices, like the class  $\mathcal{A}(R, S)$  of  $(0, 1)$ -matrices with given line sums. Both some classical results and some recent developments concerning existence questions, algorithms and related polyhedra will be discussed.