

# Determinant identities for Laplace matrices and their applications

*Prof. dr Stephan Wagner*

University of Stellenbosh, South Africa

We show that every minor of a Laplace matrix, i.e., a symmetric matrix whose row- and column sums are zero, can be written in terms of those minors that are obtained by deleting two rows and the corresponding columns. This identity has interesting applications to the enumeration of spanning trees and to the theory of electrical networks.