

Ground states of supersymmetric matrix models

D. Lundholm

Royal Institute of Technology (KTH) / Copenhagen University

We review recent progress concerning the problem of determining existence, uniqueness, and structure of zero-energy ground states in supersymmetric matrix models, which arise from a quantum mechanical description of relativistic membranes, reduced Yang-Mills gauge theory, and of non-perturbative features of string theory, respectively M-theory. One of the recent approaches involves introducing a weighted Hilbert space, and counting the number of negative eigenvalues of a certain perturbation of the associated matrix-valued Schrödinger operator.