

# Gradient neural dynamics for solving system of matrix equations and their applications

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We consider the gradient neural network models for solving several different systems of linear matrix equations in areal time. The convergence properties are investigated in details using Lyapunov method and it is shown that models are globally convergent to the general solution, determined by the initial values choice. A few applications are given, including the computation of matrix generalized inverses. Several numerical examples are shown to illustrate the theoretical results.