Neural network models and its application for solving linear and quadratic programming problems

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Abstract

In this paper we consider two recurrent neural network model for solving linear and quadratic programming problems. The first model is derived from an unconstraint minimization reformulation of the program. The second model directly is obtained of optimality condition for an optimization problem. By applying the energy function and the duality gap, we will compare the convergence these models. We also explore the existence and the convergence of the trajectory and stability properties for the neural networks models. Finally, in some numerical examples, the effectiveness of the methods is shown.

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