AN EFFICIENT APPROACH FOR CONSTRUCTING DYNAMIC MULTICAST TREES

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Abstract :
In multicast transmissions network resources are more efficiently used than multiple point−to−point transmissions. However, the problem of creating optimal multicast trees, named the Steiner Tree problem in Networks (SPN), is NP−complete, and to solve it heuristic methods are generally used. In this paper we propose the adoption of the Random Neural Network (RNN) model for the solution of the dynamic version of the Steiner Tree Problem in Networks. The Random Neural Network is adopted as a heuristic capable of improving solutions achieved by previously proposed dynamic algorithms. The RNN model is adapted in order to map the network characteristics during a dynamic multicast transmission. The proposed approach is validated by means of extensive experiments.