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SYSTEM ENGINEERING

基于剪接系统的遗传算法RBF网络建模方法

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摘要 A splicing system based genetic algorithm is proposed to optimize dynamical radial basis function (RBF) neural network, which is used to extract valuable process information from input output data. The novel RBF network training technique includes the network structure into the set of function centers by compromising between the conflicting requirements of reducing prediction error and simultaneously decreasing model complexity. The effectiveness of the proposed method is illustrated through the development of dynamic models as a benchmark discrete example and a continuous stirred tank reactor by comparing with several different RBF network training methods.

关键词 RBF network structure optimization genetic algorithm splicing system

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Splicing system based genetic algorithms for developing RBF networks models

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Abstract A splicing system based genetic algorithm is proposed to optimize dynamical radial basis function (RBF) neural network, which is used to extract valuable process information from input output data. The novel RBF network training technique includes the network structure into the set of function centers by compromising between the conflicting requirements of reducing prediction error and simultaneously decreasing model complexity. The effectiveness of the proposed method is illustrated through the development of dynamic models as a benchmark discrete example and a continuous stirred tank reactor by comparing with several different RBF network training methods.

Key words RBF network; structure optimization; genetic algorithm; splicing system;

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