最大熵原理的供热负荷预报研究

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摘要　　根据建筑供热的特点和供热节能控制的需要，提出应用最大熵法进行负荷预报，介绍了最大熵谱法原理及Burg算法，对从热力站采集的历史随机负荷序列进行预处理，将其中的确定性部分和随机部分进行分离；并对负荷样本序列，分别用相关法和最大熵谱法进行负荷预报，对两种结果进行了分析比较，采用最大熵谱法进行负荷预报，其预报精度、自适应性和算法的实时性均能较好地满足建筑分户计量节能供热的要求.

Study of heat load forecasting based on the maximum entropy principle

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Abstract

According to the characteristics of architecture heat supply and the demands for energy-saving control, load forecasting based on the maximum entropy method is proposed. By using the least square fitting and the pretreatment approach, the historical random load series collected from the heat supply station are separated into the certain part and the random part. Then the load series is dealt with by the auto-correlation method and the maximum entropy method respectively. Comparing the results of these two methods shows that the load forecasting based on the maximum entropy theory can meet the demands for heating energy-saving control in terms of the forecasting accuracy, auto-adaptive and real-time ability better.

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