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[摘要]

美國冷凍空調協會ASHRAE在Guideline 14 中曾提出一冰水機耗能經驗式做爲預測冰水機耗能模式，由於冰水機組且自該模式提出至今十幾年來，陸續有學者提出其他形式耗能測模式，使得該模式的適用性有待驗證。此外，隨著水量系統應用案例之逐漸增多，尋找可供應用於預測變冰水量冰水機組在不同運轉參數下耗能經驗模式之研究值得本文主要研究目的在於針對目前文獻中包含ASHRAE Guideline 14、DOE-2 與Modified DOE-2在內之九種具代表作之實機測試數據進行分析與評估比較。除了檢討ASHRAE Guideline 14 所提模式在預測變冰水量冰水機耗能之水機組在不同操作參數下之最佳耗能經驗模式，俾以作爲建築節能分析應用的依據。
綜合本文針對變冰水量冰水機耗能經驗模式預測準確度之研究結果發現:以Modified DOE-2 (Model 9)與Model 3的平均CVRMSE = 0.476 %。二者差距甚微，但是Modified DOE-2 在數據分析上比Model 3 較爲煩瑣。至於ASHRA CVRMSE = 14.298 %。

[英文摘要]

The ASHRAE Guideline-14 has proposed an empirical model for predicting energy consumption of liquid chillers consume of energy greatly affects the accuracy of the energy analysis of buildings; and since this particular mod there has been many scholars proposing other types of the consume of energy models; the applicability of the pr applications of VPF (variable- primary- flow systems) has gradually increased in recent years, the study of searcl power consumption for VPF chillers under various operating parameters is greatly considerable for this research The purpose of this research is aimed at nine typically empirical models, including ASHRAE Guideline 14、DOE field testing data for VPF chillers to do feasibility evaluation and accuracy comparison. Besides the examination VPF chillers proposed by ASHRAE Guideline 14, and further discuss to conclude the best empirical model for pr operating parameters, in order to use as a basis for application and analysis of energy saving for buildings.
To sum up this research of accuracy of predictions for variable chiller water flowrate of consume of energy empir accuracy of the prediction is the highest for Modified DOE-2 (Model 9) and Model 3, the former having an averag CVRMSE = 0.476 %. The amount of differences is slim, but the data analysis process for Modified DOE-2 is mor Guideline 14 (Model 6), it is the worst among all models, having an average CVRMSE = 14.298 %.

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