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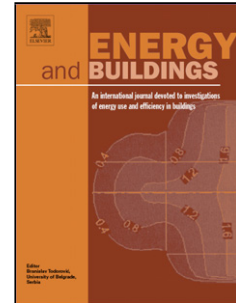
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Authors: Jiayu Chen, Yongjun Sun

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A New Multiplexed Optimization with Enhanced Performance for Complex Air Conditioning Systems

Jiayu Chen^a, Yongjun Sun^{b,*}

^aDepartment of Architecture and Civil Engineering, City University of Hong Kong, Hong Kong

^bDivision of Building Science and Technology, City University of Hong Kong, Hong Kong

*Corresponding author Tel.: 852-34422672; fax: 852-34429716 E-mail: yongjsun@cityu.edu.hk

Highlights

- A new multiplexed optimization method for enhanced performances is proposed.
- About 26,070 kWh (10.38%) daily energy can be saved as the proposed method is used.
- The computation load is reduced by 47.2% as compared with the conventional method.
- The proposed method can also significantly improve system stability.

Abstract: With the increased complexity of air conditioning systems, the computational load and complexity of real-time optimization appear to be challenging for applications. To overcome the challenge, multiplexed optimization has been proposed in which multiple set-points are sequentially optimized and updated one by one. In such a way, it can achieve equivalently-good energy performance but with exponentially reduced computational load if compared with those traditional methods that optimize all set-points simultaneously. In fact, the time instant for each set-point optimization and the set-point optimization sequence have

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