1 Paper77

This paper should be categorized into theoretical ones. It proclaims a heuristic optimization algorithm used to speed up the traditional way of calculating energy consumption. In general, the approach this paper takes to induce its algorithms is correct but the algorithms are a little self-evident.

Strengths. The authors created a new algorithm which is both computationally efficient and more practical than the traditional one.

Weaknesses. The main weakness of this paper is in the algorithms. There are not some fancy operations but merely patching the in-use LP method to their own needs, namely, having a tighter restriction.

Evaluation. Overall, this paper deserves 7.5/10.

Generally speaking, this pure theoretical paper is well-written with regard to the specific problem it's tackling. There are no obvious grammar errors. However, a few citations are missing in the paper in section 2.1.2 and 2.1.4. It puts forward two algorithms that can be regarded as a mediocre between MILP and LP. These two algorithms are created "in need", so they are not easy to generalize. Moreover, the authors do state that this is a much simplified scenario to consider AC energy consumption optimization so its validity in real-life is left to be proved.

2 Paper97

This paper is a theoretical one with real-life data collected and analyzed by "best practice" data mining method, i.e. KNN. After analyzing zone-based occupancy data, one more theoretical HVAC method is put forward to compete against traditional ON/OFF one. The simulation of FineTherm method shows a over 30% energy reduction, which will be put into examination in real world according to the authors.

Strengths. A scale-free metric is created to tackle energy efficiency in office buildings. This metric is generalizable so it's easy for other researchers to validate. Moreover, the model built to reflect occupancy is "preliminary" at the same time but reported to be accurate.

Weaknesses. Overall, the paper is a good one. The main weakness lies in the STEM equation itself, which is also admitted by authors in section 2.2. By using this equation we can get a number, but we can not infer from it the exact situation in the building, the STEM value is high may due to either a high occupancy or a high energy consumption.

In general, this paper demonstrates its contributions properly. We can find few grammatical errors and sufficient citations to work done before. From this paper we can get several handy equations to use or validate. But the occupancy model may suffer in cases like a completely open office, and as with the FineTherm approach, more simulations and real world validations are expected.

3 Paper99

This paper is more or less an experimental one featuring a mobile phone application used to do sort of "real-time" occupant comfort data collection and a pretty straight-forward algorithm to dynamically control BMS system, thus improving the overall occupants' comfort level.

Strengths. Since this paper focuses more on engineering and experiments, it is successful with regard to this field. Several experiments and simulations are carried out to show that the authors' ideas are applicable.

Weaknesses. The TCC model described in section 4 is pretty straight-forward and a little preliminary. Before formally building their model, the authors make some justifications why they do not use the other one which may have a higher accuracy. For this part more comparisons are expected.

In general, this paper does not overstate its contributions. A few experiments were set based on an algorithm to optimize office temperature by controlling BMS, with a metric computed using TCC model. However, the validity of this TCC model is well worth more investigations. For example, what could the results be if we make the $L(T_i, T_o)$ more complicated?