

Accepted Manuscript

Title: The Suitability of Machine Learning to Minimise Uncertainty in the Measurement and Verification of Energy Savings

Author: Colm V. Gallagher Ken Bruton Kevin Leahy
Dominic T.J. O'Sullivan



PII: S0378-7788(17)31851-0
DOI: <https://doi.org/doi:10.1016/j.enbuild.2017.10.041>
Reference: ENB 8061

To appear in: *ENB*

Received date: 25-5-2017
Revised date: 24-8-2017
Accepted date: 8-10-2017

Please cite this article as: Colm V. Gallagher, Ken Bruton, Kevin Leahy, Dominic T.J. O'Sullivan, The Suitability of Machine Learning to Minimise Uncertainty in the Measurement and Verification of Energy Savings, *Energy & Buildings* (2017), <https://doi.org/10.1016/j.enbuild.2017.10.041>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Highlights: "The Suitability of Machine Learning to Minimise Uncertainty in the Measurement and Verification of Energy Savings"

Colm V. Gallagher, Ken Bruton, Kevin Leahy, Dominic T.J. O'Sullivan

August 23, 2017

- The suitability of machine learning algorithms to improve the measurement and verification of energy savings in industrial buildings is presented.
- Six individual modelling algorithms are applied and their prediction accuracy was validated in the context of a case study.
- Machine learning was found to reduce error by 51.1% compared to an assumed typical approach.
- A higher measurement frequency does not always result in reduced uncertainty in savings quantified.
- The use of machine learning under missing baseline data conditions is shown to be advantageous.

Download English Version:

<https://daneshyari.com/en/article/6729449>

Download Persian Version:

<https://daneshyari.com/article/6729449>

[Daneshyari.com](https://daneshyari.com)