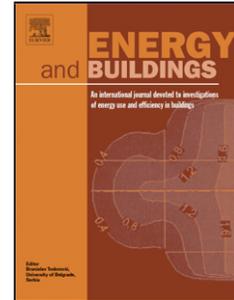


## Accepted Manuscript

Title: On the distortion of thermal flux and of surface temperature induced by heat flux sensors positioned on the inner surface of buildings

Authors: Mario Cucumo, Vittorio Ferraro, Dimitrios Kaliakatsos, Marilena Mele



PII: S0378-7788(17)32323-X  
DOI: <https://doi.org/10.1016/j.enbuild.2017.10.034>  
Reference: ENB 8054

To appear in: *ENB*

Received date: 10-7-2017  
Revised date: 20-9-2017  
Accepted date: 9-10-2017

Please cite this article as: Mario Cucumo, Vittorio Ferraro, Dimitrios Kaliakatsos, Marilena Mele, On the distortion of thermal flux and of surface temperature induced by heat flux sensors positioned on the inner surface of buildings, Energy and Buildings <https://doi.org/10.1016/j.enbuild.2017.10.034>

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.

# On the distortion of thermal flux and of surface temperature induced by heat flux sensors positioned on the inner surface of buildings

## AUTHORS

Mario Cucumo, Vittorio Ferraro, Dimitrios Kaliakatsos\*, Marilena Mele

## \*CORRESPONDING AUTHOR

Professor Dimitrios Kaliakatsos

Department of Mechanical, Energetics and Management Engineering (DIMEG)

University of Calabria

Via P. Bucci, Cubo 44C

87036 Rende (CS) - Italy

Phone: +39 0984 494603

Fax: +39 0984 494673

## OTHER AUTHORS ADDRESSES

Department of Mechanical, Energetics and Management Engineering (DIMEG)

University of Calabria

Via P. Bucci, Cubo 44C

87036 Rende (CS) - Italy

E-mail: [m.cucumo@unical.it](mailto:m.cucumo@unical.it)

E-mail: [vittorio.ferraro@unical.it](mailto:vittorio.ferraro@unical.it)

E-mail: [mele\\_marilena@libero.it](mailto:mele_marilena@libero.it)

## Research highlights

- Evaluation of the deflection of the heat flux of internal walls of a building provoked by heat flux sensors.
- Supply useful information about the positioning of the sensors and the measurements obtained from them.
- Comparison between the experimental and calculated values of temperature and heat flux for the walls containing a sensor for the in situ evaluation of transmittance.
- Analysis of the errors induced by the presence of Heat Flux Sensors.

## ABSTRACT

The in situ determination of overall heat transfer coefficient (transmittance) of the opaque components which constitute the envelope of existing buildings, allows a more accurate evaluation of the real energetic consumptions of a building and, furthermore, this value is a useful tool for energetic certification.

The value of transmittance can be calculated theoretically using the European Standard EN ISO 6946 or can be obtained from the analysis of experimental recorded temperature and heat flux values.

Download English Version:

<https://daneshyari.com/en/article/6729452>

Download Persian Version:

<https://daneshyari.com/article/6729452>

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