EMS Annual Meeting Abstracts
Vol. 12, EMS2015-14, 2015
15th EMS / 12th ECAM

Introducing a cumulative thermal index based on Physiologically Equivalent Temperature (PET) for the bioclimatic assessment of urban open spaces

Ioannis Charalampopoulos (1), Ioannis Tsiros (1), and Andreas Matzarakis (2)

(1) Agricultural University of Athens, Lab. of General and Agricultural Meteorology, Athens, Greece, (2) Albert-Ludwigs-University Freiburg, Germany

The research of human thermal comfort is a topic that the urban planners' community considers as an important factor for the wellbeing, the human health and the energy consumption for heating and cooling. To strengthen the communication and the collaboration between bioclimatologists, landscape designers and architects rational and easy to understand evaluation tools such as cumulative indices are needed. This paper is introducing a simple yet comprehensive cumulative thermal load index which is based on PET (physiologically equivalent temperature). The index is applied for the evaluation of five outdoor urban spaces in Athens, Greece. The analysis and the results indicate the simple and easy utilization of the new index and the clarity of the conclusions of the selected spaces' bioclimatic behavior. Additionally the examined case study revealed the beneficial influence of the dense urban green in contrast to the built environment.