


Event:  
Date:  
Place:

**ENERGY in BUILDINGS 2017**  
Saturday October 21, 2017  
Athens, Hellas



#	<b>Constantinos A. Balaras, PhD</b> Dr Mechanical Engineer, FASHRAE	
Title:	Research Director, Group Energy Conservation, Institute for Environmental Research & Sustainable Development, National Observatory of Athens, Greece	
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Presentation title:	<b>Practical Impact Assessment of Weather Data on Calculated Energy Performance of a Residential Hellenic Building</b>	
<p>This work presents the results obtained with TEE-KENAK software for a typical single-family house as influenced by using the available standard weather datasets for 62 locations in Greece. The goal is to compare the impact of the different weather datasets on the calculated heating and cooling energy demand, annual primary energy use and resulting energy class. The analysis is performed for the four climate zones defined in Greece in order to gain an insight on the variability of the results and make a first practical assessment of the impacts on the uncertainty of input weather data, the need for additional weather data and the allocation of the various locations in the four national climate zones, among others. The results are elaborated in terms of the tool's practical functions and its use as the official tool for the energy labelling of buildings in Greece. For this case study, the calculated annual primary energy consumption using the available weather datasets presents a variability that ranges from 16.8% in climate zone A (south) to 3.1% in climate zone D (north) for a partially insulated house and from 14.3% to 9.0% for a well insulated house. The variations in energy class rankings are limited. The analysis also reveals potential issues with the allocation of some locations in the defined climate zones.</p>		

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CV:

Dr. Balaras is a Research Director with the Group Energy Conservation at the Institute for Environmental Research & Sustainable Development -NOA, Athens, Greece. He has over 30 years of experience in R&DD in the areas of energy conservation, high performing buildings, thermal and solar building applications, building energy audits-diagnosis and refurbishment, national regulations - technical guidelines – software tools for EPBD transposition, environmental impact of buildings, indoor environmental quality, thermal energy systems and building thermal simulations, solar air-conditioning. He holds a PhD and MSc in Mechanical Engineering from Georgia Institute of Technology. He is a registered EUR ING and Chartered Mechanical Engineer, member of the Technical Chamber of Greece, Fellow ASME, Fellow ASHRAE. Dr. Balaras has over 260 scientific publications in Journals and Conferences and over 20 contributions in books.

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