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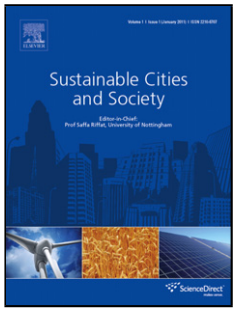

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Numerical modeling validation for the microclimate thermal condition of semi-closed courtyard spaces between buildings

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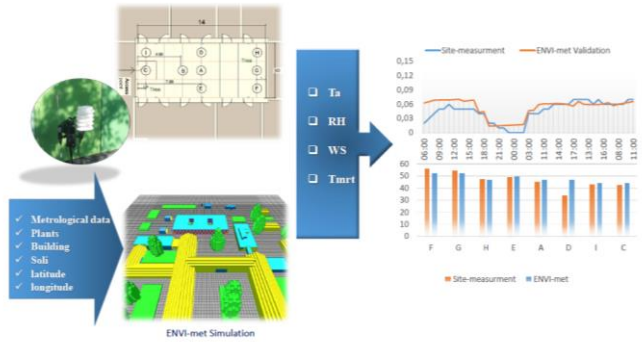
Graphical abstract



Highlights:

- A proper choice and determination of input parameters for numerical simulations of semi-closed spaces with the software ENVI-met.
- Experimental measures of microclimatic variables inside medium-narrow courtyard spaces.
- Comparison between the ENVI-met outputs and the values measured experimentally at different points inside the courtyard and in different climate conditions.
- The model showed very similar results between measured and simulated data, with the root mean square error RMSE value 0.73°C for Ta, 3.34% for RH, 0.01 m/s for WS and 8.44 °C for Tmrt.