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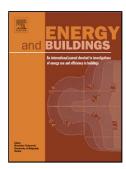
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Numerical Modeling of Ventilated Wall Cavities with Spray Evaporative Cooling System

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Nomenclature

| а | radius of the droplet (m) | Sc | Schmidt number |
|-----------------------------|--|----------------------|--|
| A_g | cavity aspect ratio | Та | Temperature of air inside the control volume (°C) |
| Acav | cross section area of the cavity (m ²) | Ti | Temperature of induced air (°C) |
| Ain | area of wind catcher inlet (m ²) | T _{o1} | Temperature of outdoor surface of the outer cavity wall (°C) |
| Aout | area of the cavity outlet (m ²) | T _{o2} | Temperature of the indoor surface of the outer cavity wall (°C) |
| c | tangent of the half-angle of spray | T _{i2} | Temperature of the outside surface of the inner cavity wall (°C) |
| C_D | drag coefficient | T _{i1} | Temperature of the inside surface of the inner cavity wall (°C) |
| c_{pl} | specific heat of water (kJ/kg.K) | T _c | Temperature of air inside the ventilated cavity (°C) |
| c_{pa} | specific heat of air (kJ/kg.K) | Tin | indoor temperature (°C) |
| d | ventilated cavity depth (m) | $T_{\rm sol}$ | Sol-Air temperature (°C) |
| $D_{\scriptscriptstyle AB}$ | mass diffusivity (m ² /s) | T _{Sol-Air} | Sol-Air temperature (°C) |
| Dh | hydraulic diameter of the ventilated cavity (m) | Toutdoor | outdoor air temperature (°C) |
| e | absolute roughness of cavity wall surface | V_a | induced air velocity (m/s) |
| FN | Flow Number | V_l | droplet velocity (m/s) |
| g | gravitational acceleration | V_{l0} | initial velocity of the droplet (m/s) |

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