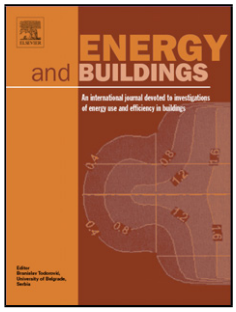

Title: Approximate Equations to Estimate Heat Flow From Floors to Attain Desired Room Temperatures in a Simple House

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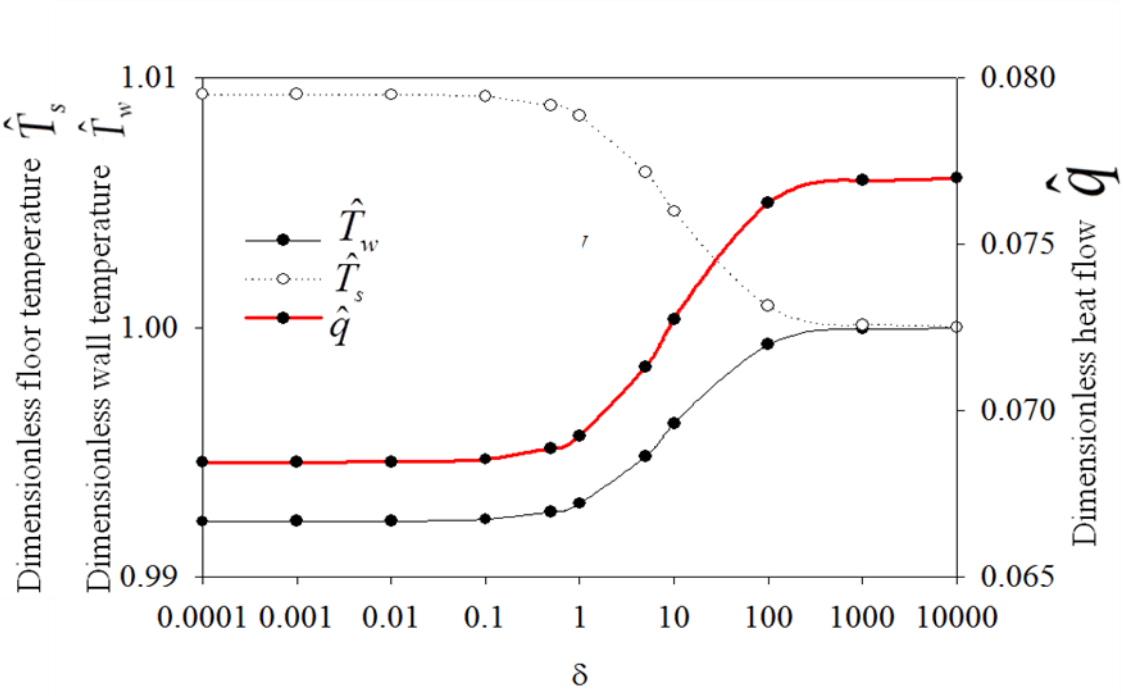
Graphical Abstract



When δ is small (≤1), radiation dominates and convection has little effect. Above this value (≥1), convection plays an increasing role. At the extreme limit of very large δ, convection reaches a level such that dimensionless floor temperature $\hat{T}_s$ and dimensionless wall temperature $\hat{T}_w$ converge to the room temperature ($\hat{T}_w = \hat{T}_s = 1$). Very high heat transfer $\hat{q}$ from the floor is required for this limiting case.