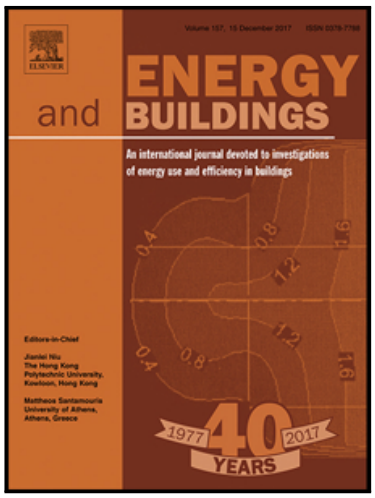

A Computationally Efficient Numerical Model for Heat Transfer Simulation of Deep Borehole Heat Exchangers

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Highlights

- A finite difference model has been developed for thermal analysis of coaxial deep BHE.
- Based on FDM, an algorithm of alternant time step methodology has been employed.
- Performance of a virtual deep borehole heat exchanger is assessed with parameter analyses.
- High-resistance inner pipe helps in reducing heat losses and improving heat transfer capacity.
- The insulation between the upper section of borehole and the ground has minor influence