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Comprehensive Thermal Performance of Convection-Radiation Longitudinal Porous Fins with Various Profiles and Multiple Nonlinearities

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Highlight

- The temperature distribution and heat performance of the longitudinal porous fins is presented.
- The radiation heat transfer from porous fin is taken into account and simulated by Roseland model.
- The rectangular, trapezoidal, and concave exponential profiles are considered for fin shape.
- Least square method (LSM) is used for solving the governing equation.
- Heat flux, fin efficiency and volumetric fin performance are used to compare fins with each other.

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