عنوان مقاله:

(A Comparison of Six Methods Used to Evaluate Apparent Thermal Diffusivity for Soils (Iğdır Region, Eastern Turkey

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خلاصه مقاله:

The objective of this work is to investigate the infl uence of boundary conditions at depth soil on the development of methods to determine the soil's apparent thermal diffusivity based on solution of inverse problems of a heat-transfer equation. Experimental investigations were carried out to establish the influence of boundary conditions at depth in soil on the solution of inverse problems of modeling of heat transfer in soils. For this purpose, ١ soil profile in the land at different depths (x=٠, ۵, ١٠, ١۵, ۲٠, ۴٠, ۶٠ cm) thermal sensors (Temperature recorder Elitech RC-۴) have been installed to measure soil temperatures depending on time and depths. Based on these data, the apparent thermal diffusivity in soils was calculated using the classical (layered) and proposed (point) methods developed for the case with one and two harmonics, and they were compared and the calculated characteristics were compared with the experimental results. It was found that the proposed point methods best reflect the movement of heat in the soil profile.

کلمات کلیدی:

soil thermal properties, heat conduction model, apparent thermal diffusivity, boundary conditions, comparison of methods

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