

عنوان مقاله:

Hydrothermal nanofluid flow analysis by AGM method

محل انتشار:

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خلاصه مقاله:

In this paper, nanofluid flow analysis between two parallel plates is investigated using a Akbari-ganji method (AGM). As new method and by comparing it with numerical methods it can be concluded that the AGM has high efficiency and acceptable accuracy for solving nonlinear problems with high order of nonlinearity. The partial differential equations governing the flow problem were converted to ordinary differential equations by using suitable similarity transformation. After that the Akbari- Ganji's Method (AGM) has been used to solve differential equations governing this problem. The effect of adding nano-particles to the water which is flowing between two rotating plates has been investigated. The chosen nano-particles are Al_2O_3 and TiO_2 . The effects of Eckert and squeeze numbers on flow and heat transfer characteristics are investigated. The results show that with increase of Eckert, the temperature enhances while the velocity profile wasn't changed. Also, the velocity and temperature profile was decreasing behavior with squeeze number.

کلمات کلیدی:

Nanofluid, Eckert, squeezing, AGM

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