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Thin accretion disks around multi-polytropic wormhole

M Heydari Fard and F Eghbalpoor

Department of Physics, The University of Qom, Qom, Iran

E-mail: heydarifard@qom.ac.ir

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Abstract

In this paper, we study the physical properties of thin accretion disks in static and spherically symmetric multi-polytropic wormhole space-time. By using the Novikov-Thorne model, the electromagnetic flux, temperature distribution, innermost stable circular orbits and radiative efficiency of thin disks are obtained. Comparing the results with traversable wormholes obtained by Morris and Thorne (TWH) and the Schwarzschild solution, we show that the thin accretion disks around multi-polytropic wormhole geometry are more luminous and efficient than the TWH and Schwarzschild black hole.

Keywords: accretion disks, wormhole, black hole physics

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