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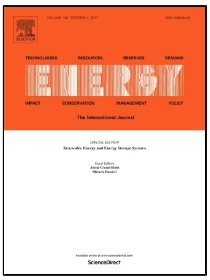

Wavy-tape insert designed for managing highly concentrated solar energy on absorber tube of parabolic trough receiver

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Highlights

1. A parabolic trough receiver equipped with a wavy-tape insert is investigated numerically.
2. Wavy-tape insert leads to highly localized heat transfer enhancement effects.
3. Highly concentrated solar energy can be carried away more efficiently by using wavy-tape insert.
4. Wavy-tape insert benefits to the decreases of entropy generation rate, heat loss and structure stress.
5. Wavy-tape insert is more effective when operating at relatively lower working fluid flow rate.