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Thermal performance analysis of novel alternative designs for parabolic trough solar collector

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The solar parabolic trough collector is amongst the most mature solar technologies and becomes more cost-effective in recent years. We build on our previous work on hot mirrors to study an absorber with a mirrored cavity. The cavity absorber for the parabolic trough receiver is designed to reflect solar radiation back onto the absorber very efficiently, which would otherwise be lost. We built a RU in the laboratory to study the thermal performance for different designs and we accompanied this study with a mathematical module implemented on a simulation code. In this work, the simulation and the experiments show a good agreement, validating the applicability of the code and the proposed designs.

Apply to be considered for a student award (Yes / No)?

Yes

Level for award (Hons, MSc, PhD, N/A)?

PhD

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