

Reviewer 1: The authors present a numerical study of concentrated photovoltaic-thermal solar collectors with spectral beam splitters. I really enjoyed reading the manuscript and how the information was presented. However, I think the work could be improved if the following comments are considered:

The authors would like to thank the reviewer for the comments

How was the collector geometry selected?

Since the collector was designed for silicon solar cells choosing a high concentration will result in overheating of the solar cells. To avoid this, the collector was designed for a geometrical concentration ratio of 6.2. This has now been added to the manuscript in section 2.2.

A figure with the mesh and boundary conditions applied would help clarify how the numerical simulations were performed.

The authors would like to thank the reviewer for the suggestion. This has been included in Figure 2 of the manuscript.

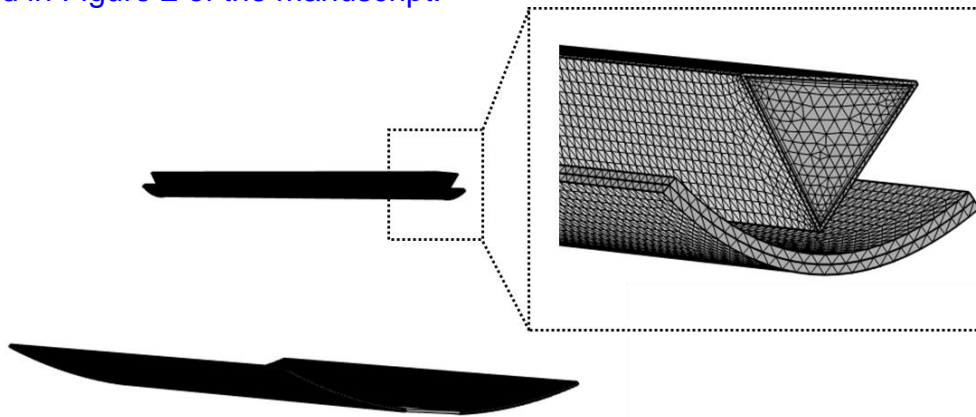


Figure 1. Meshed CPV-T collector.

Was a mesh independence study done?

The authors would like to thank the reviewer for the comment. Yes, the mesh-independent study was conducted for the simulation. The following paragraph has now been added to the manuscript in section 2.5.

A mesh-independent study was also conducted on the model. For the simulation of the model, a physics-controlled mesh was used. The mesh sizes were varied from coarse to finer (options available in COMSOL). It was observed that the simulation did not converge for coarse mesh due to multiple physics involved in the simulation such as optics, heat transfer, and fluid mechanics. Furthermore, when the mesh sizes were reduced to finer size with 271907 domain elements, the results were fairly accurate as presented in sections 3.1 and 3.2. When mesh elements were reduced to the extra fine, it was difficult to simulate the model due to the limited computational capacity of the workstation. Therefore, finer elements were chosen for this study.

Are the geometries of other works comparable? Maybe adding a table with their characteristics and the ones of the present study could highlight the validity of the comparisons.

The authors have now incorporated a table for comparing the geometrical concentration of different concentrators in Table 1 of the manuscript.

Table 1. Comparison of concentration ratio investigated in previous studies.

| Study | Geometrical concentration ratio |
|---------------------|---------------------------------|
| Zhang et al. [19] | 7 |
| Peacock et al. [17] | 10 |
| Present work | 6.2 |

Reviewer 2: This is a good contribution to the ECOS 2023 conference. The paper is well structured and detailed, and you have a very good discussion. I recommend this paper for oral presentation.

The authors would like to thank the reviewer for the comment.