



## **The effect of rectangular heliostat shape ratio on the spiral layout performance of a solar tower thermal power plant**

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### **ABSTRACT**

The heliostat structure and shape must deliver the essential rigidity to accurately reflect solar radiation onto the target under several working conditions. Therefore, the aim of this study is to investigate the effect of various rectangular heliostat shape aspect ratios  $\varepsilon = L/W$  on the spiral layout performance considered by keeping the same heliostat area. Here 'L' and 'W' are the length and width of the rectangular heliostat shape respectively. An in-house computer programme is developed based on the vector geometry to design different heliostat models that can quantify the effect of the introduced aspect ratio changes on the efficiency of the spiral heliostat field layout. Results are presented and showed that the field efficiency can be importantly affected when using different values for this heliostat aspect ratio.

Keywords: efficiency; heliostat; aspect ratios; optimal Field tower; Spiral layout.

