



Ty Glisczinski

MS Student
Mechanical Engineering

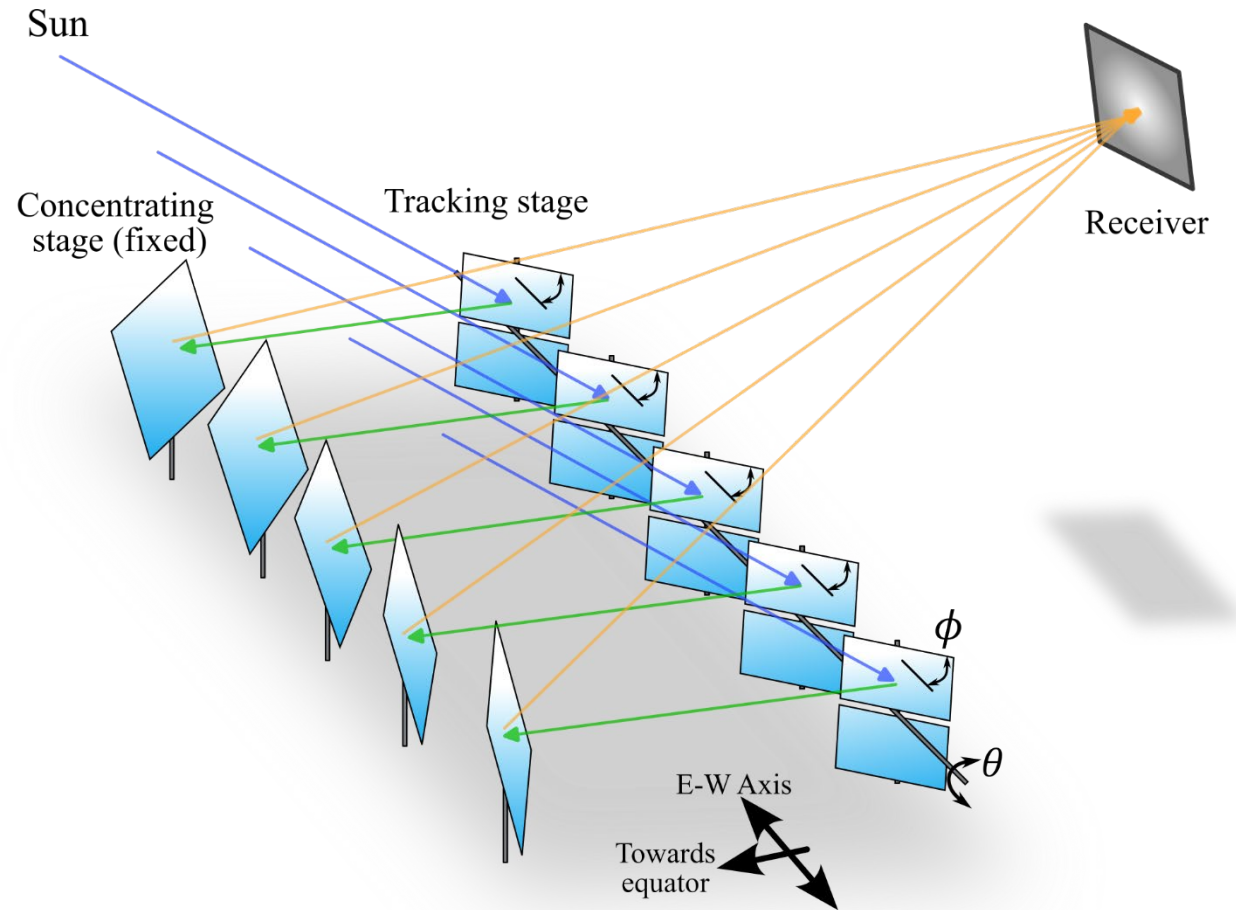
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Project: Model Characterization of Blocking and Shading Losses in a Novel Two-Stage Heliostat
Advisor(s): Gregory Nellis, Mike Wagner
Sponsor: NREL



Background

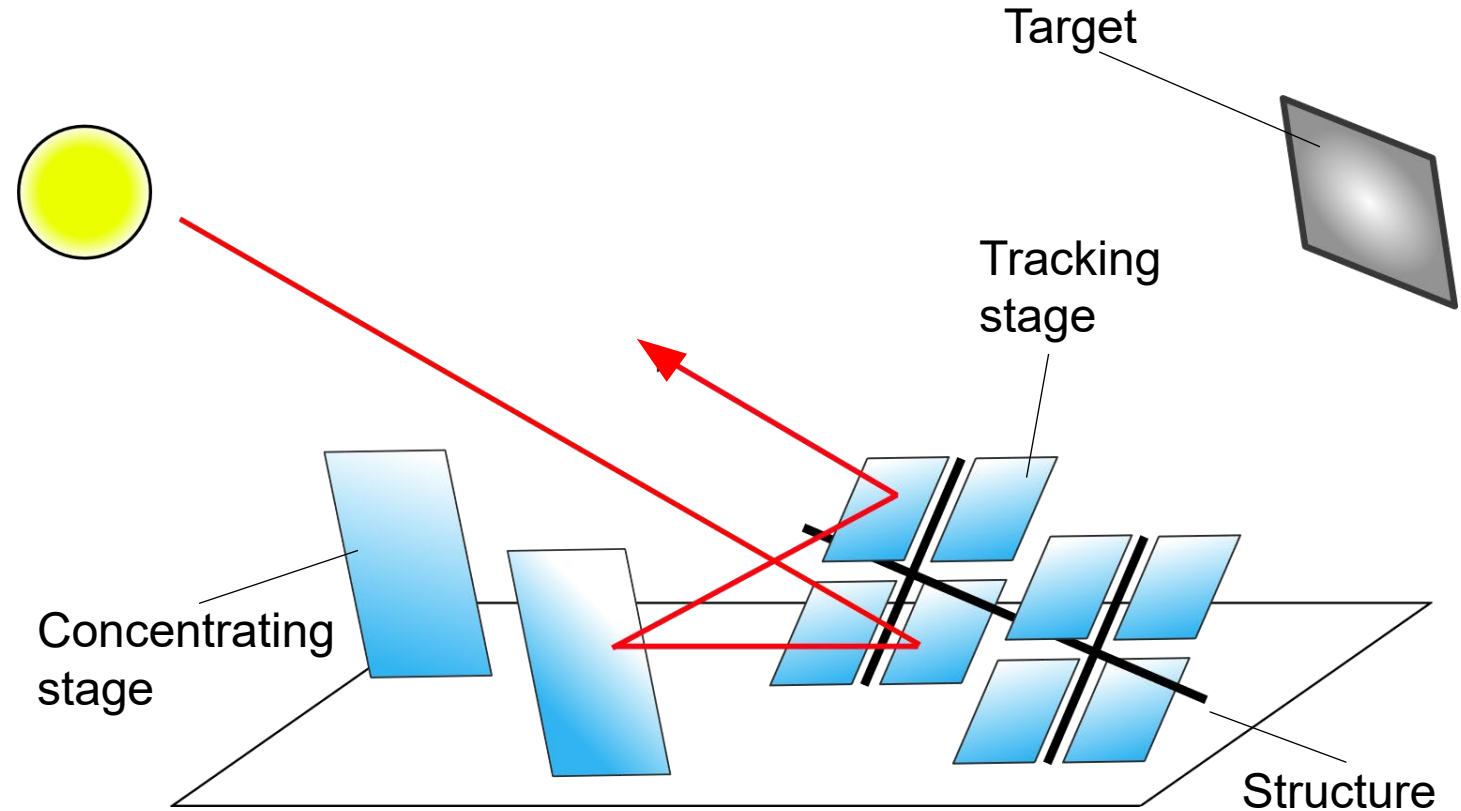
- All mirrors in tracking stage share common angles
- Mirrors controllable by single pair of dedicated drives
- Control large mirror area composed of small inexpensive mirrors
- Addition of second stage introduces self-shading loss mechanisms





Project Goals

- Estimate self-shading losses for single heliostat unit at discrete locations and geometric parameters
- Use results to generate function predicting losses due to self-shading within continuous positional domain and parameter space



Example of self-shading:
Tracking shades concentrating
to target