#flo #ret #ref #disorganized #incomplete #hw

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1 | **Les go.**

- we need to figure out:
  - what is the curve of generation over a day
  - how does this curve shift over the seasons?
- our inputs
  - location
  - time of year (season)
- output
  - generation curve over a day

look into: Global Tilted Irradience.

all we care about is the relative shape and how the relative shape changes! this is because the other stuff will be consistent, and we aren't recommending a solar system

1.0.1 | **terms:**

solar irradiance: power per unit area (W/m^2) integrated over time gives us: insolation (j/m^2) solar irradiance aka solar flux: power per unit area!

TSI: total solar irradiance. when the sun is perpendicular! over a sqaure meter. this is just a constant

zenith angle: angle between suns rays and vertical direction (of earth). "local normal to earths surface" and sun rays (line between point on earth surface and sun)

declination angle: lattitude of point directly under the sun at **noon** complement of solar zenith angle

subsolar point: point that is closest to the sun on a planet

hour angle *h*: defined as the longitude of the subsolar point relative to its position at noon. AKA how far it moves in an hour!

A cos zenith angle is the area of sunlight recieved per area on earth AKA how much sunlight area ur actully getting for an area on earth.

1.0.2 | **helpful relations**

spherical law of cosines!

$\bar{Q}day = S0\pi\bar{d}d2[h0 \sin\phi \sin\delta + \cos\phi \cos\delta \sin h0]$