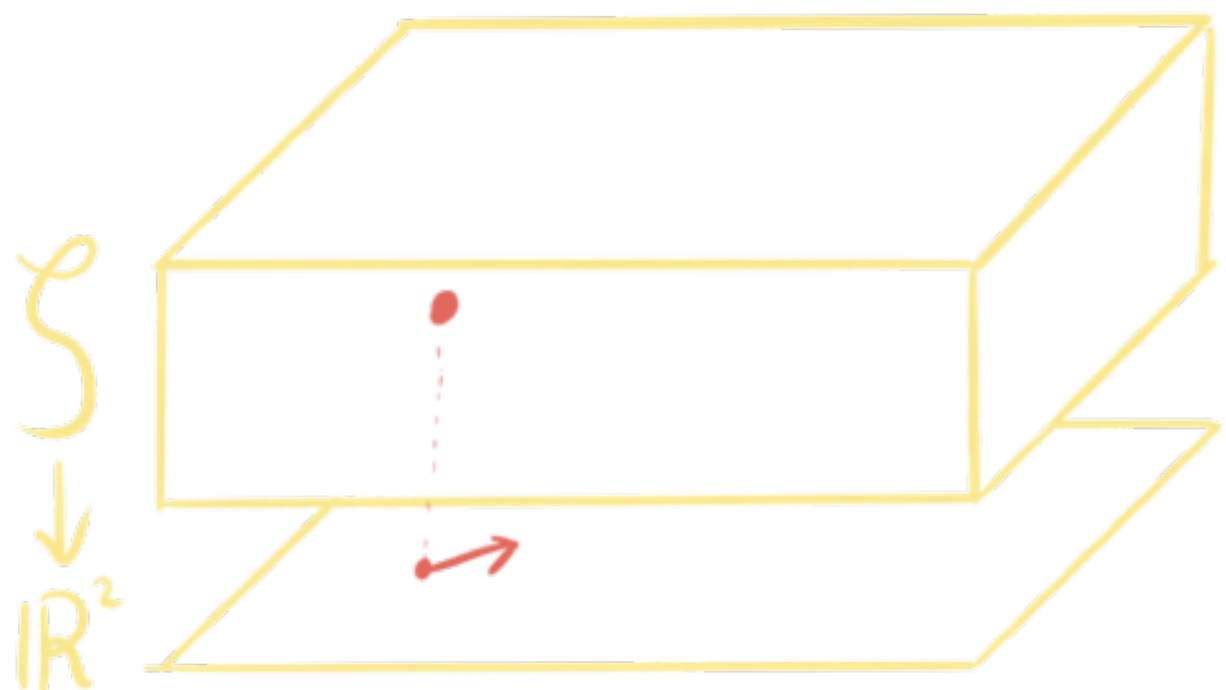
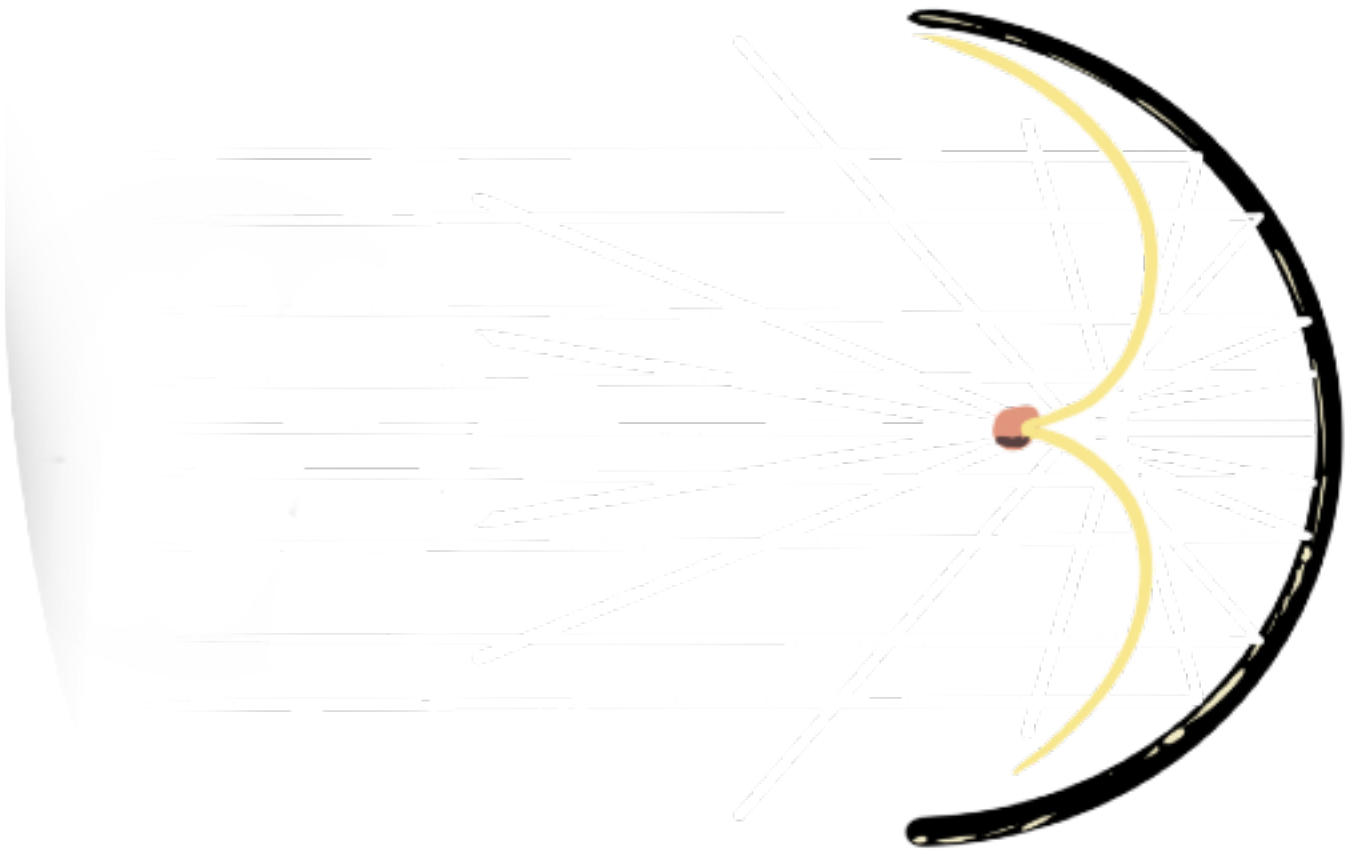
draw circle as interval

$[0,1]/0\sim1$ $[0,1]$ $\mathbb{R}^2$





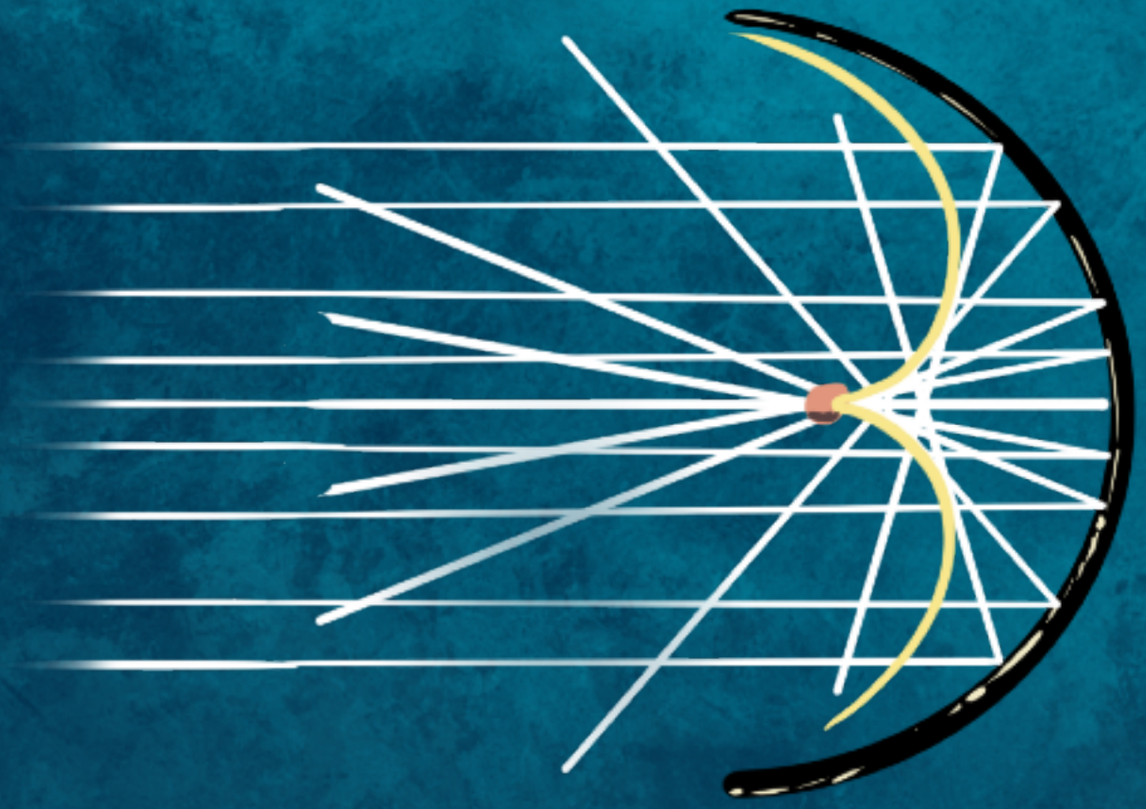
Keep track of position & direction of light

$$\mathcal{S} = \{(p, v) \mid p, v \in \mathbb{R}^2,\ \|v\| = 1\}$$

unit vector @ p

"phase space" = $\mathbb{R}^2 \times S^1$

Where is
the sheet??



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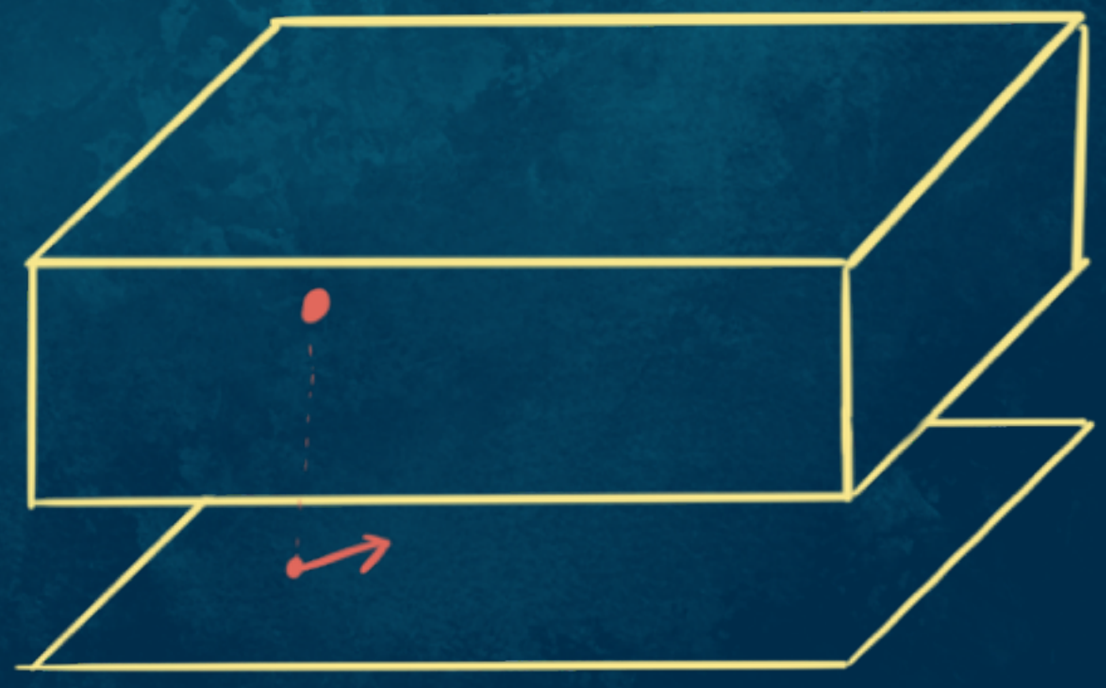

Light rays define Surface in $\mathcal{S}$