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LAST TIME: 1) SPECULAR / PARTIALLY SPECULAR

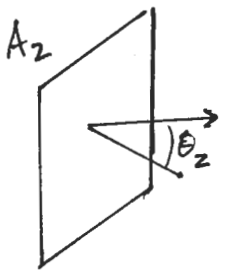
2) SEMITRANSPARENT SURFACES / WINDOWS

→ REFLECTION / TRANSMISSION COEFF'S

→ 2 METHODS: RAY TRACING VS. OVERALL NRG BAL.

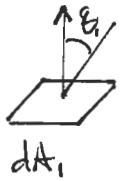
3) NON GRAY SURFACES

4) MONTE CARLO SIMULATION



$\varepsilon'_{\lambda,2}(T_2, \lambda, \theta_2)$

$\| \alpha'_{\lambda,2}$ VIA KIRCHOFF



$\varepsilon'_{\lambda,1}(T_1, \lambda, \theta_1)$

$\downarrow \int\int \varepsilon'_{\lambda,1} d\lambda d\theta$

$\varepsilon_1(T_1)$

* $\theta_1 \rightarrow \theta_2$ CONVERSION REQUIRED

$$d\dot{Q}_{e,1} = \varepsilon_1 \sigma T_1^4 dA_1$$

N bundles

$$W = \frac{d\dot{Q}_{e,1}}{N}$$

$$dP'_{\lambda\phi} = i_{\lambda b}(T_1)\varepsilon'_{\lambda,1} \cos\theta_1 dA_1 \cdot \underbrace{d\Omega}_{= \sin\theta_1 d\theta_1 d\phi_1} d\lambda$$

$\int$ OVER ALL ϕ $\Rightarrow$ 2π FACTOR

$$dP'_{\lambda} = 2\pi i_{\lambda b} \varepsilon'_{\lambda,1} \sin\theta_1 \cos\theta_1 d\theta_1 d\lambda dA_1$$

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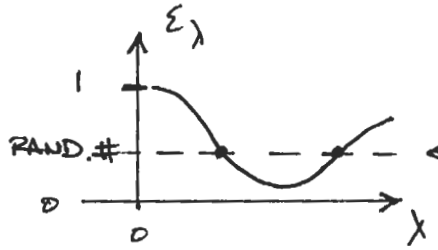
$$d\theta_1\, d\lambda\, \underbrace{P_\lambda'}_{\text{PROBABILITY DENSITY}} = \frac{2\pi i_{\lambda b}\, \varepsilon'_{\lambda,1} \sin\theta_1 \cos\Delta\theta_1}{\varepsilon_1 \sigma T_1^4}\, d\theta_1\, d\lambda$$

$$P_\lambda(\lambda) = \int_0^{\pi/2} P_\lambda'\, d\theta_1$$

$$P_\theta = \int_0^{\infty} P_\lambda'\, d\lambda$$

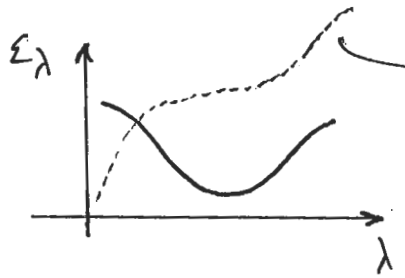
GENERATING RANDOM #'s, FROM 0 → 1



ONE RAND. # CAN CORRESPOND TO MULTIPLE VALUES

(WORK-AROUND...)

→ USE CUMULATIVE PROBABILITY



CUMULATIVE VALE IS MONOTONIC

⇒ NO MULTIPLE VALUES!

$$\int_0^{\lambda} P_\lambda\, d\lambda = R_\lambda \Rightarrow R_\theta \Rightarrow R_\phi \Rightarrow \phi = 2\pi R_\phi$$