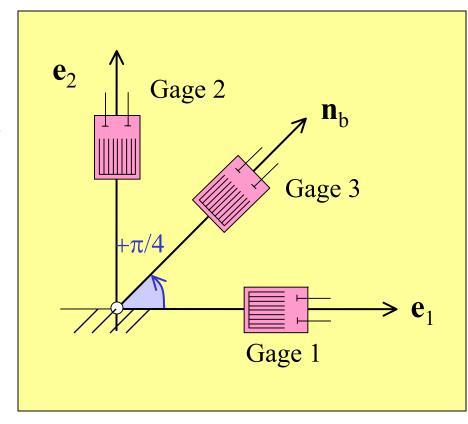
Strain Gage Rosette Graphical Determination

Measurement:

3 Relative Length Variations from Strain gages

 λ_1 , λ_2 , λ_b

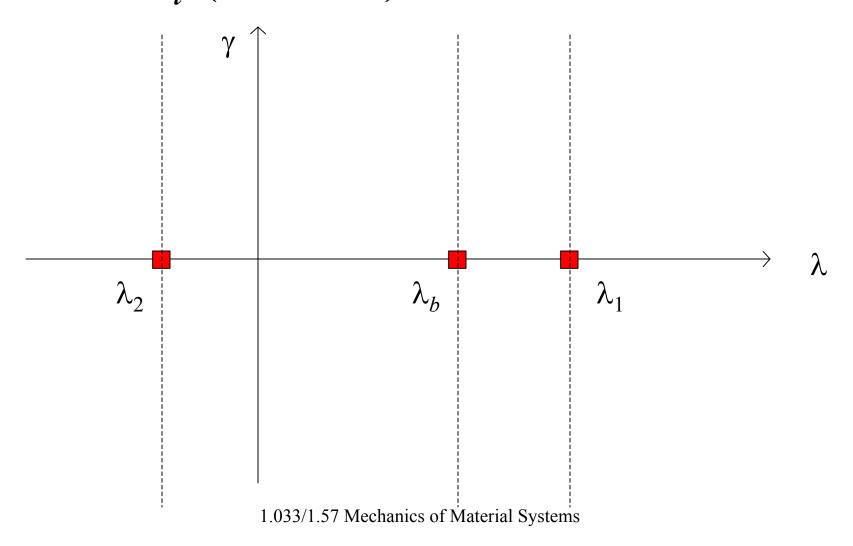


Aim:

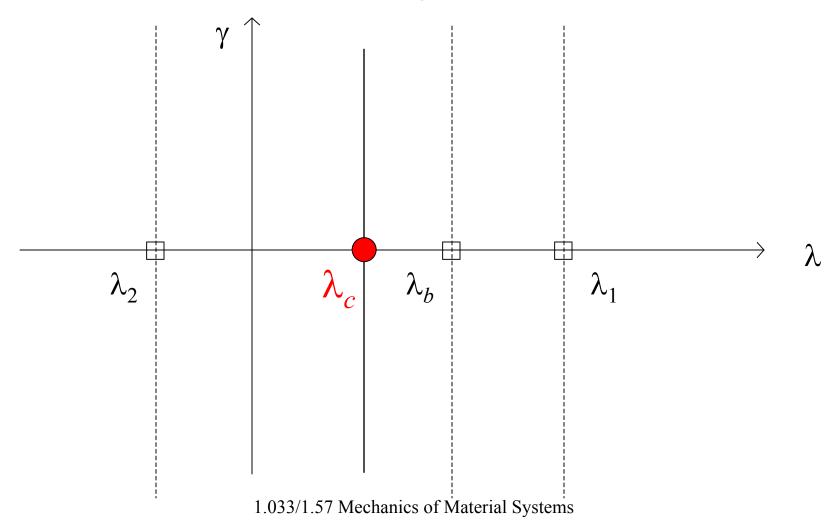
Find $\varepsilon_{12} = \gamma(\mathbf{e}_1, \mathbf{e}_2)$

1.033/1.57 Mechanics of Material Systems

1. λ_i (i=1,2,b) in Mohr Plane



2. Center: $\lambda_c = (\lambda_1 + \lambda_2)/2$



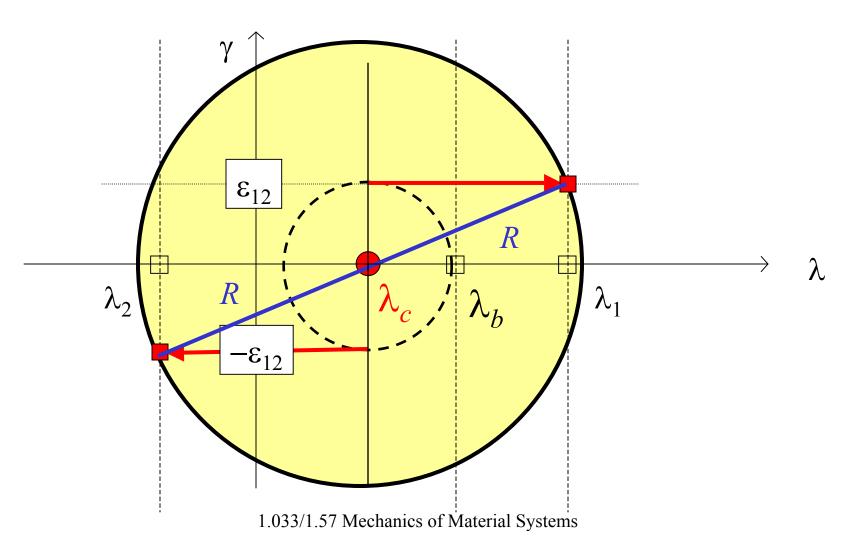
3.
$$\varepsilon_{12} = \lambda_b - (\lambda_1 + \lambda_2)/2 = \lambda_b - \lambda_c$$

$$\lambda_b \qquad \lambda_1$$

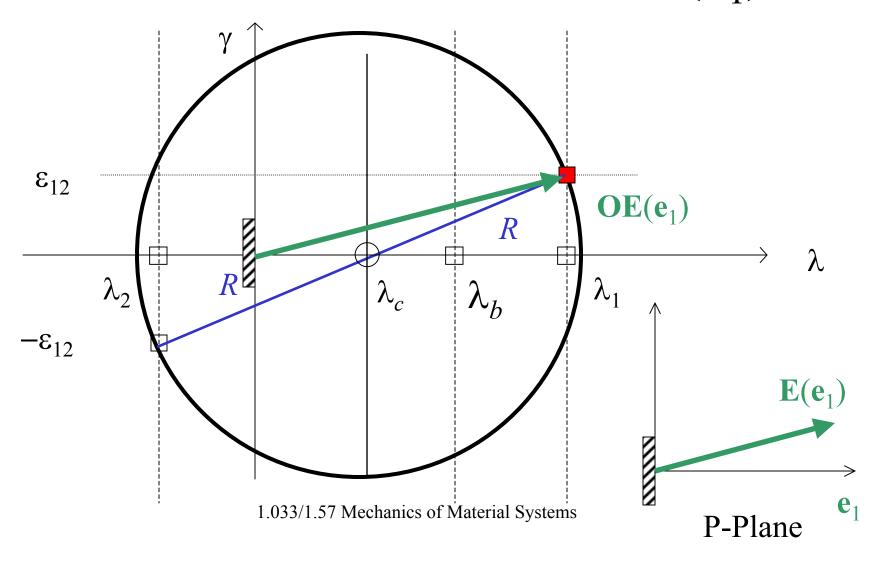
$$\varepsilon_{12} \qquad \lambda_b \qquad \lambda_1$$
Construction circle of Radius
$$\varepsilon_{12} = \lambda_b - \lambda_c$$

$$1.033/1.57 \text{ Mechanics of Material Systems}$$

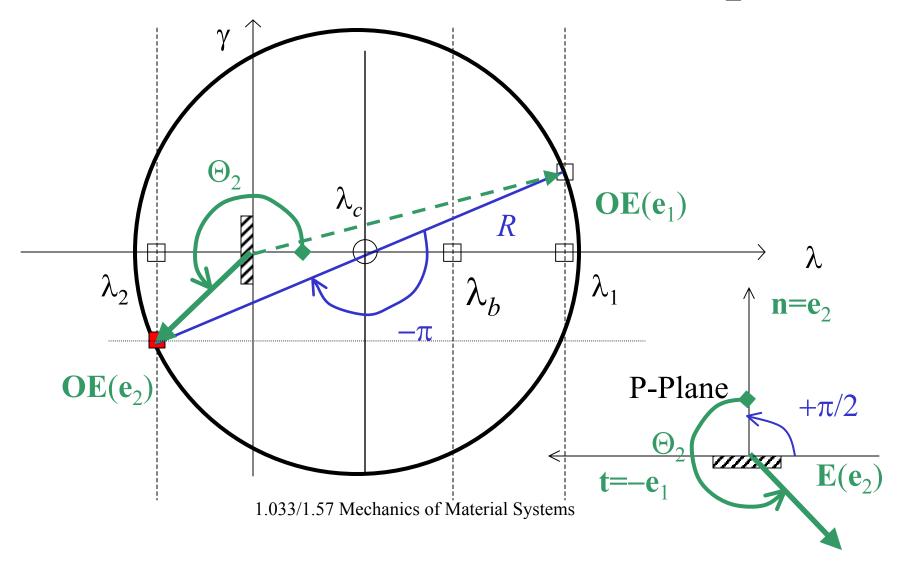
4. The Mohr Circle



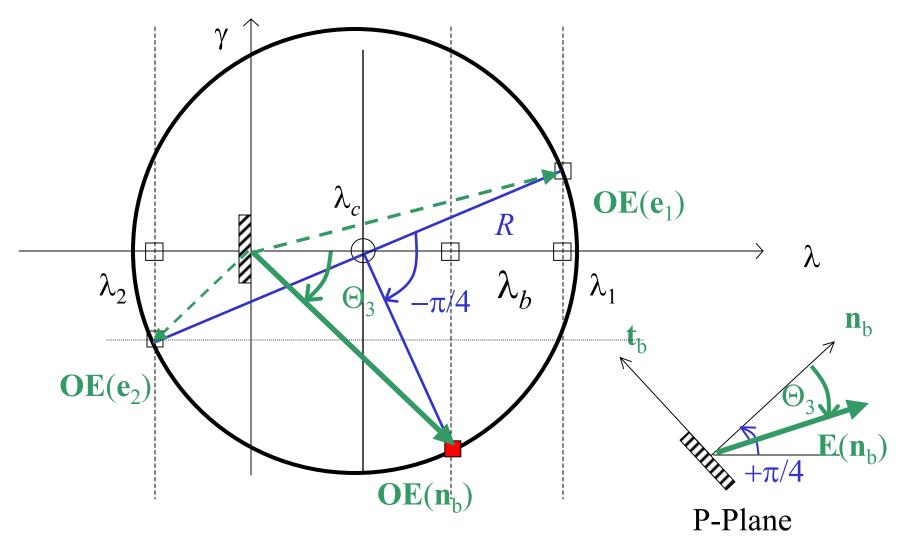
5. The Strain Vectors: $OE(e_1)$



6. The Strain Vectors: $OE(e_2)$



7. The Strain Vectors: $OE(n_b)$



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