
principalstrains

Computes the principal strains of a unidirectional lamina

Inputs

strain_glo - [epsx;espy;epsxy]
 epsx - Global longitudinal strain
 espy - Global transverse strain
 epsxy - Global in-plane strain

Outputs

pe1 - Principal strain in direction 1 and the corresponding angle
pe2 - Principal strain in direction 2 and the corresponding angle
gmax - Maximum shear strain and the corresponding angle
thetape - Angle at which principal strain occurs
thetase - Angle at which maximum shear strain occurs

Calling the Function

```
[pe1,pe2,gmax,thetape,thetase]=principalstrains(strain_glo)
```

Testing File

Click [here](#) to see a testing file for using the function
principalstrains

Example

Inputs:

```
Longitudinal Global Strain: 0.0007486  
Transverse Global Strain: -0.001157  
In-Plane Global Strain: 0.002306
```

Outputs:

Principal Strains for Lamina

pe1		0.00229089
pe2		-0.00269929
gmax		0.00249509
thetape		33.7752
thetase		-11.2248

Description

Outputs the principal strains, maximum shear strain, and their corresponding angles for a unidirectional lamina