```
import numpy as np
import matplotlib.pyplot as plt
import sympy as sp

np.set_printoptions(precision=3)

def Transform(theta):
    m = np.cos( np.deg2rad(theta) )
    n = np.sin( np.deg2rad(theta) )
    return np.array([
        [m**2, n**2, 2*m*n],
        [n**2, m**2, -2*m*n],
        [-m*n, m*n,  m**2 - n**2]], np.float64)

#solve problem assuming plane stress
E1 = 50 * 10**9
E2 = 15.2 * 10**9
v12 = 0.254
G12 = 4.70 *10**9

#using V12/E1 = V21/E2 symmetry
S = np.array([
    [1/E1       , -v12/E1   , 0],
    [-v12/E1    , 1/E2      , 0],
    [0          , 0         , 1/G12]], np.float64)

theta = np.linspace(-90, 90, 1000)

T = Transform(theta)
T_ = np.rollaxis(T, 2)

S_bar = np.einsum('...jk,kl,...lm->...jm', T.T, S, T_) #[S_bar] = [T.T][S][T]

S11_bar = S_bar[:,0,0]
S22_bar = S_bar[:,1,1]
S16_bar = S_bar[:,0,2]
S26_bar = S_bar[:,2,1]

nu_xy_x = S16_bar / S11_bar
nu_xy_y = S26_bar / S22_bar

#https://matplotlib.org/users/mathtext.html
fig, (ax1, ax2) = plt.subplots(2, 1, sharex=True)

ax1.plot(theta, nu_xy_x, label=r'$\eta_{xy,x}$')
ax1.set_title('Coefficients of Mutual Influence of First Kind v. Ply Angle')
ax1.set_ylabel(r'$\eta_{xy,x}$', fontsize=20)
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```
i = np.where(nu_xy_x == nu_xy_x.max())
pair = (theta[i], nu_xy_x[i])
ax1.plot(*pair, 'o')
ax1.annotate(r'$Max$ $\eta_{xy,x}={%.2f}$, $\theta={%.1f}^\circ$' %pair[::-1],
xy=pair)

ax2.plot(theta, nu_xy_y, label=r'$\eta_{xy,y}$')
ax2.set_ylabel(r'$\eta_{xy,y}$', fontsize=20)
ax2.set_xlabel(r'$\theta^\circ$', fontsize=15)

i = np.where(nu_xy_y == nu_xy_y.max())
pair = (theta[i], nu_xy_y[i])
ax2.plot(*pair, 'o')
ax2.annotate(r'$Max$ $\eta_{xy,y}={%.2f}$, $\theta={%.1f}^\circ$' %pair[::-1],
xy=pair)

plt.xticks(np.linspace(-90, 90, 13))

plt.show()
```