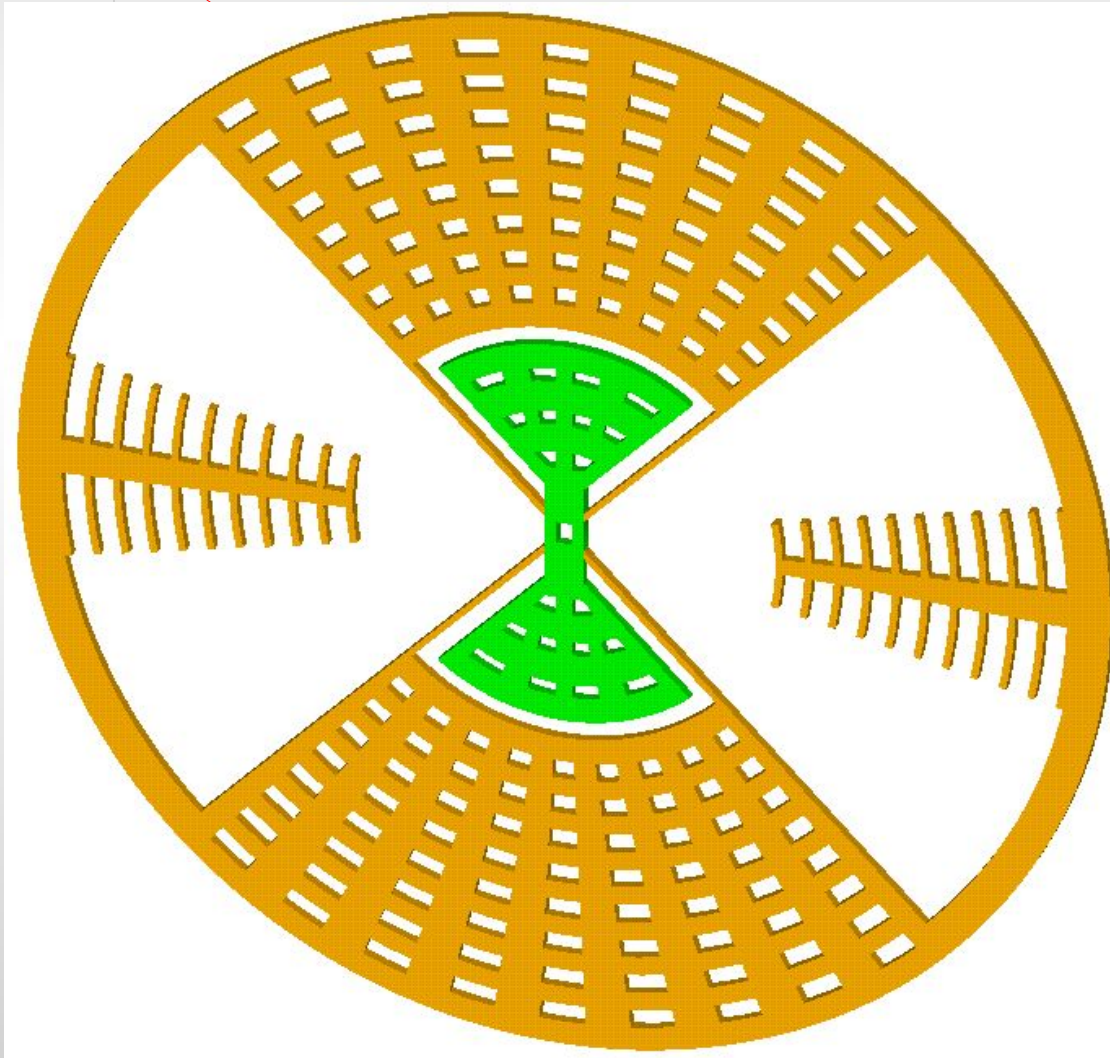


# Finite element modeling and modal analysis of micromechanical gyroscope sensitive element

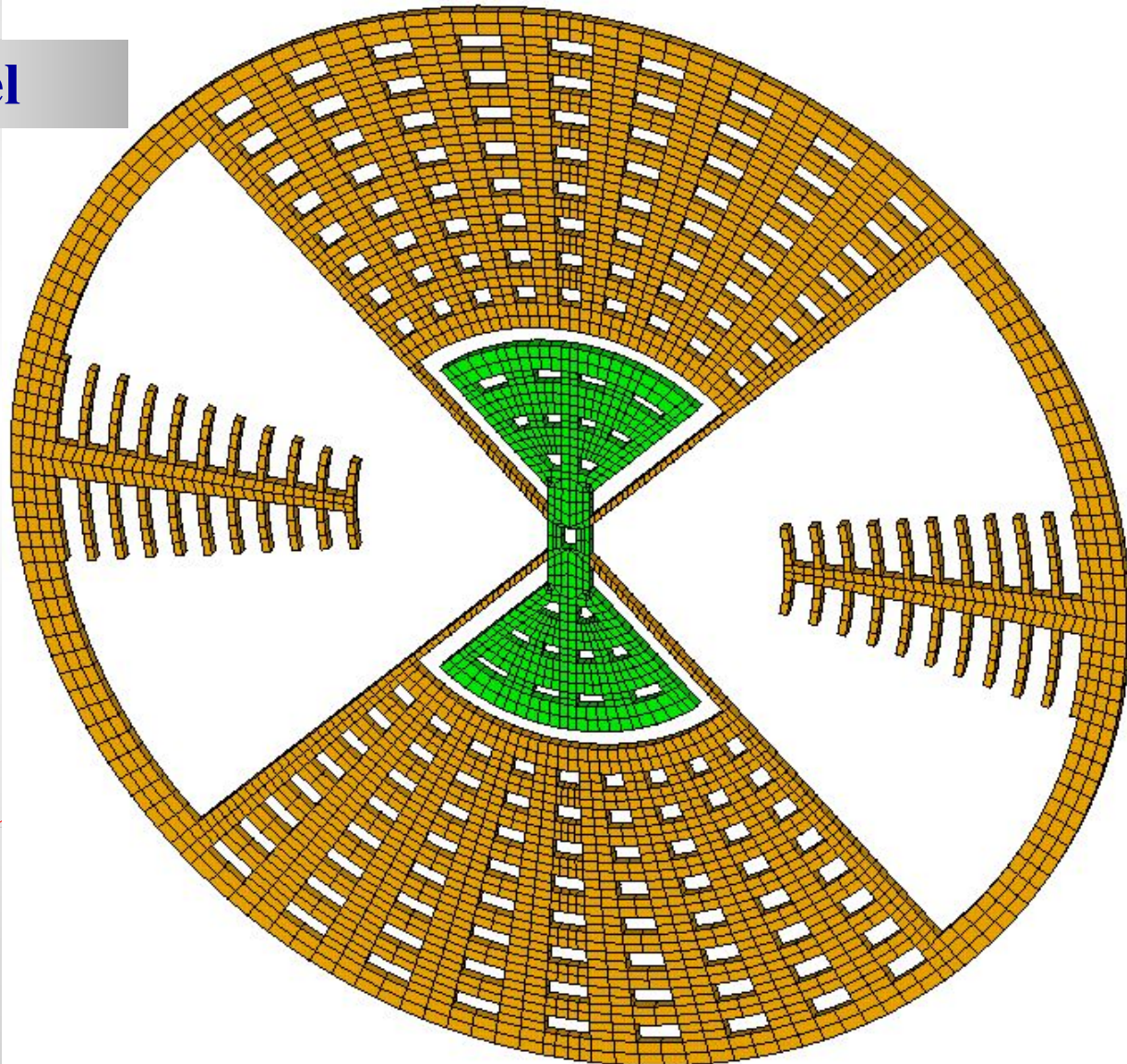
3D model



# Finite element modeling and modal analysis of micromechanical gyroscope sensitive element

**3D FE model**

**NE = 3328**  
**NDF = 88416**

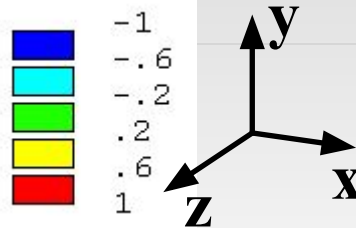




# Finite element modeling and modal analysis of micromechanical gyroscope sensitive element

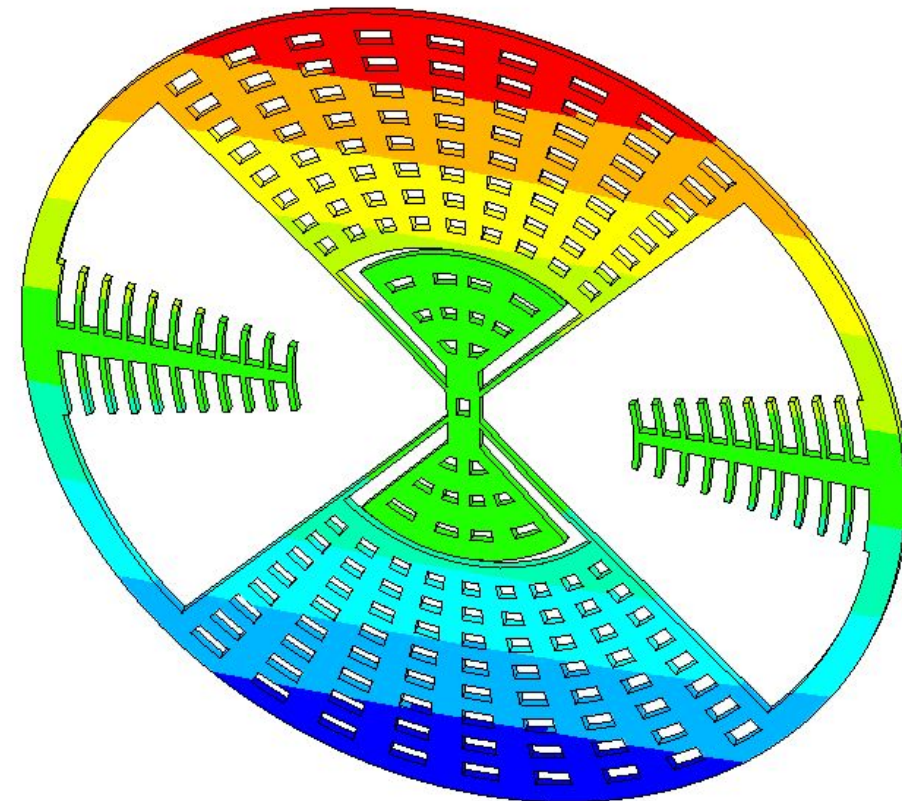
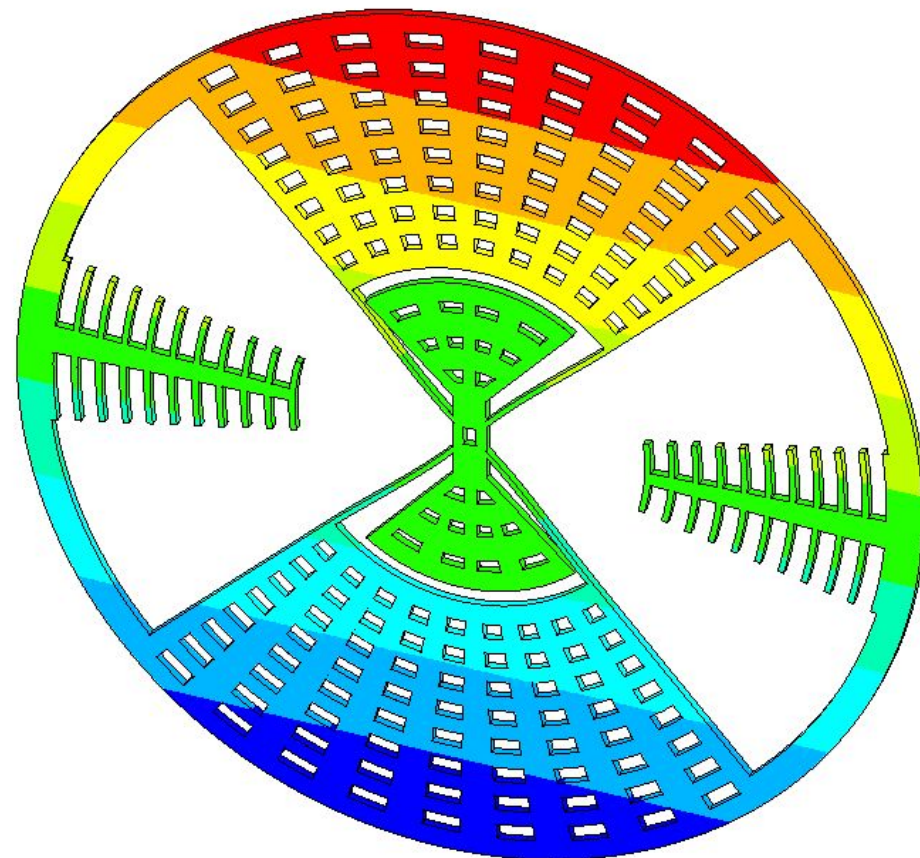
First natural mode

$F_1$



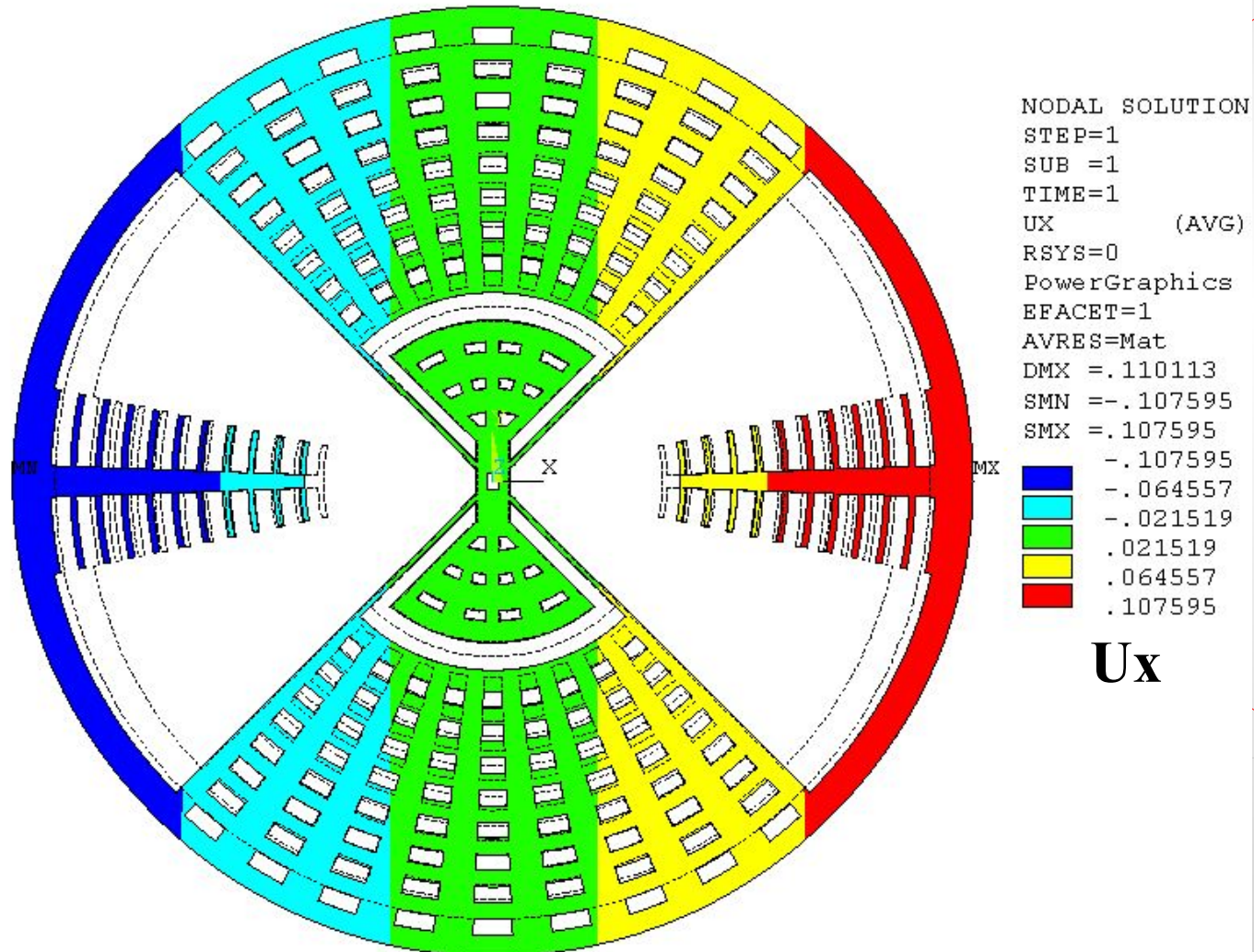
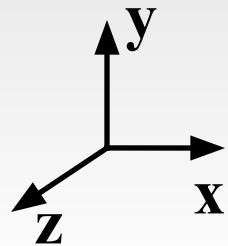
Second natural mode

$F_2$



# Finite element modeling and modal analysis of micromechanical gyroscope sensitive element

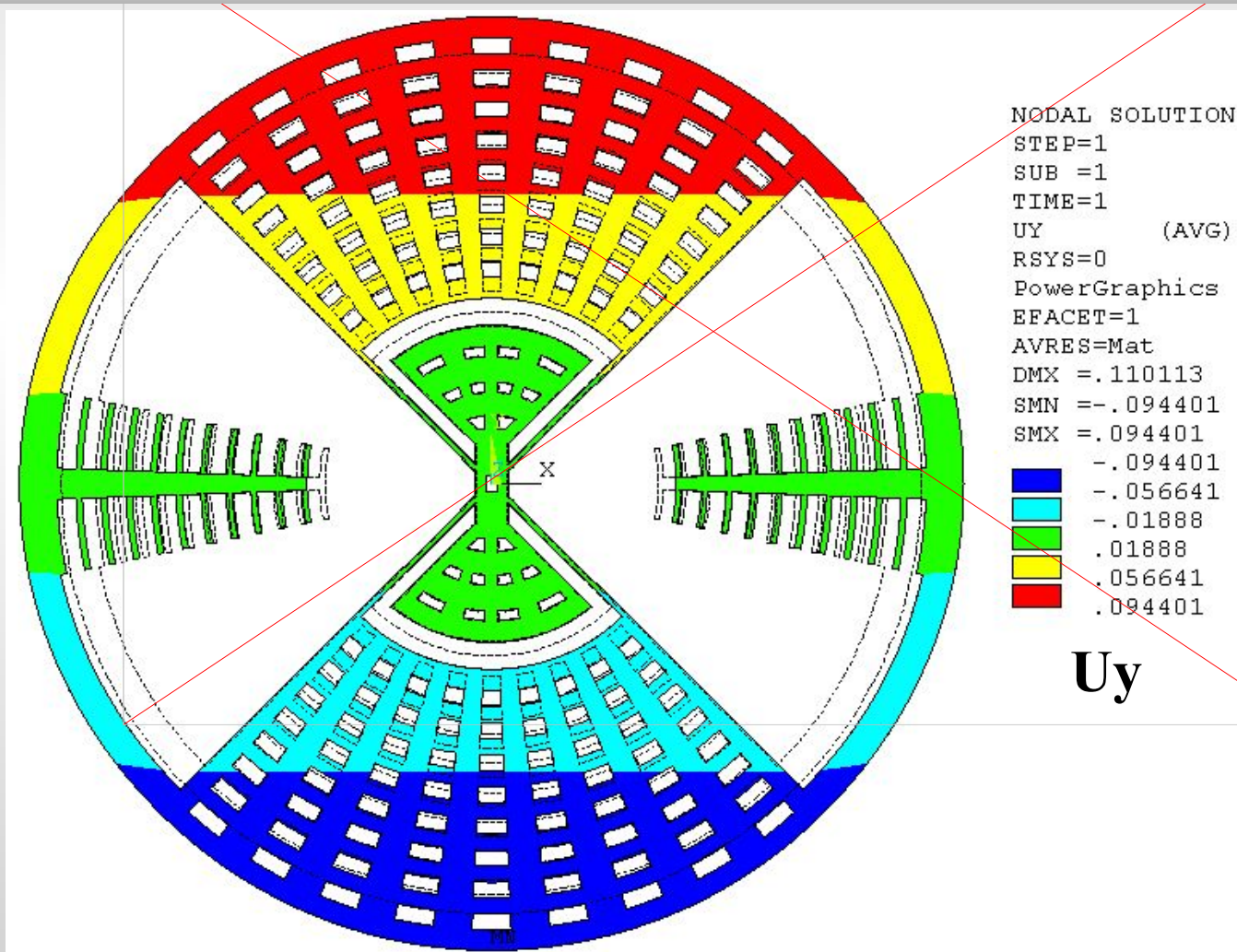
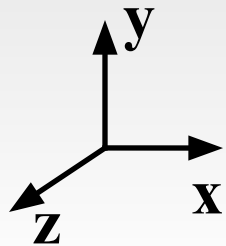
## Displacements $U_x$





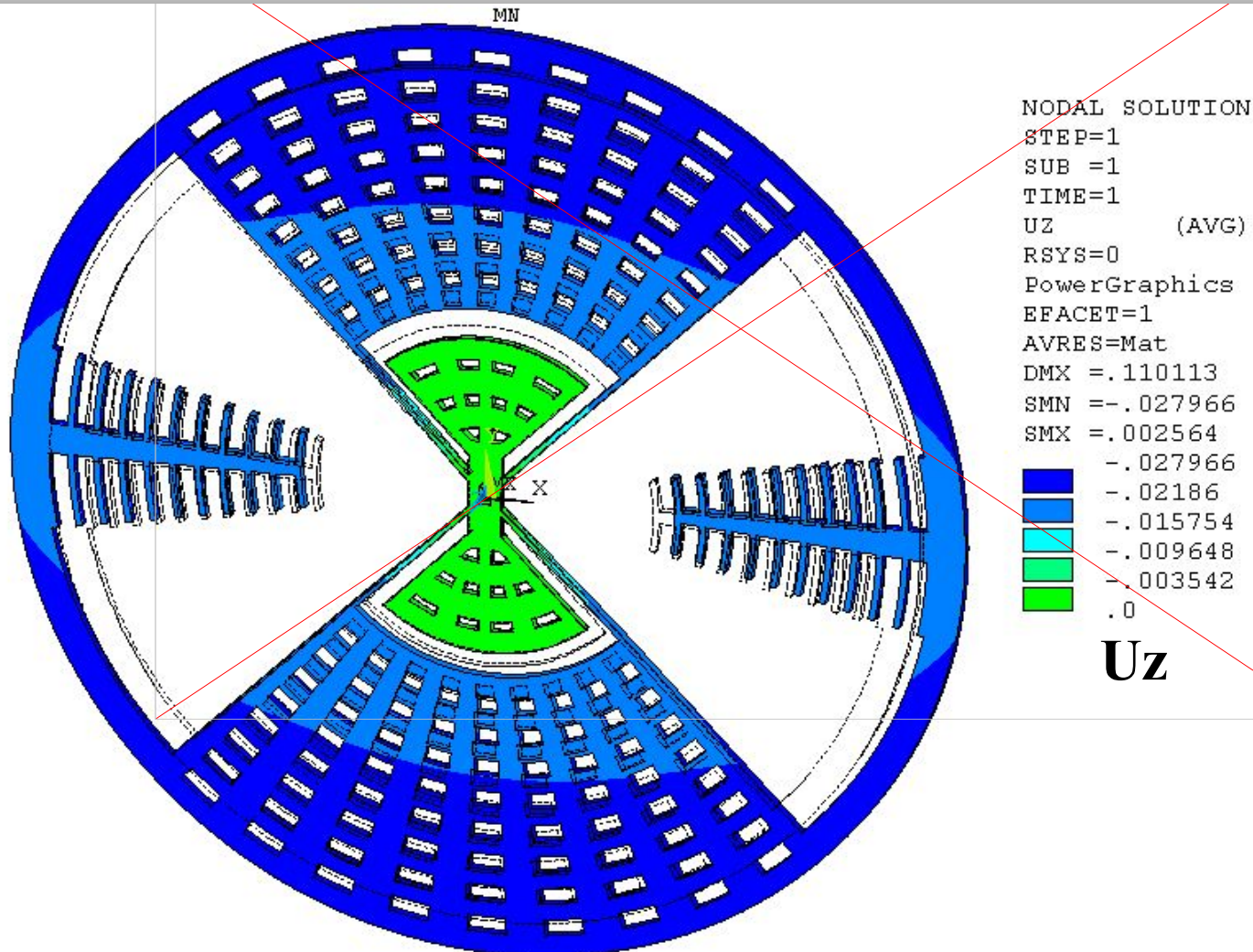
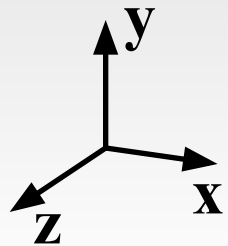
# Finite element modeling and modal analysis of micromechanical gyroscope sensitive element

## Displacements $U_y$



# Finite element modeling and modal analysis of micromechanical gyroscope sensitive element

## Displacements $U_z$



# Finite element modeling and modal analysis of micromechanical gyroscope sensitive element

Influence of deformed state arising at sensitive element manufacturing on a spectrum of natural frequencies

	without account of deformed state	with account of deformed state ( $T = 20^{\circ}\text{C}$ )
1 <sup>st</sup> natural frequency	$F_1$	$0.994* F_1$
2 <sup>nd</sup> natural frequency	$F_2$	$0.995* F_2$