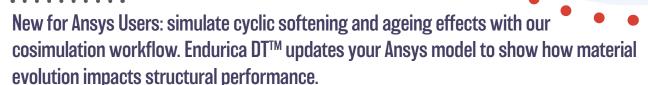




Incremental Fatigue Solver

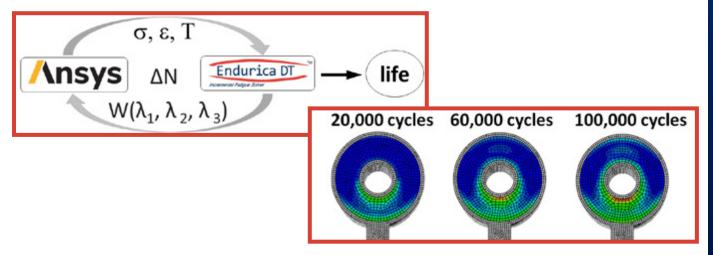
## **2022 ANSYS** CAPABILITIES UPDATE



Firms making elastomeric parts that must endure long-term exposure to high temperatures will benefit from Endurica's new ageing feature to help them know how long their product will last.

#### The simulation:

- Uses the Arrhenius Law to calculate relative ageing rate as a function of temperature
- Integrates to find equivalent exposure time for each element in the finite element model
- Captures time-dependent changes in the fatigue crack growth rate law
- Can also be coupled to the Ansys finite element solver to update stress and strain fields during the solution



## BENEFITS OF COSIMULATION

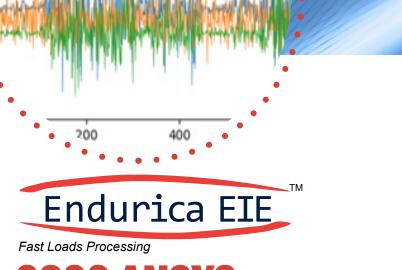
- Both time and cycle-dependent effects are computed
- Model effects of load vs. displacement control
- Show stiffness / function changes vs. cycles
- Account for feedback between damage and loading



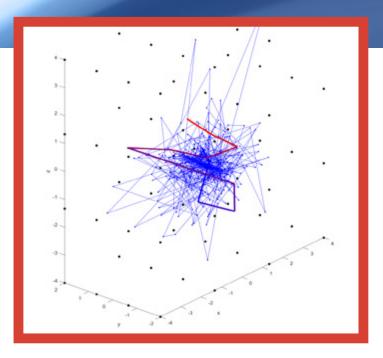


Get Durability Right®

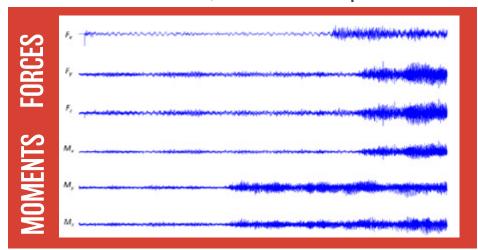




# 2022 ANSYS CAPABILITIES UPDATE



Ansys users can now apply Endurica  $ElE^{IM}$  to solve all channels (3 forces or displacements and 3 moments or rotations) of an elastomeric part.



## **KNOW FOR SURE**

Enables car makers to ensure durability under actual driving conditions

## THROUGH PROVEN SCIENCE

 Critical Plane Analysis takes into account rubber's nonlinear material properties, providing accurate results

FOR ELASTOMERS

## THE BENEFITS

- EIE users can execute full-length road load signal analysis in minutes
- Rubber part suppliers can include more realism in their engineering
- Vehicle manufacturers can determine durability using actual loads recorded at the test track





#### **Solutions for Elastomer Durability**

- Simulation Software
- Characterization Services
- Testing Instruments
- Training