Project 19 - Mechanism of Dwell Fatigue Crack Initiation in Ti-7Al Under Biaxial Tension-Tension Loads

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Project Duration: 3.5 years

Achievement

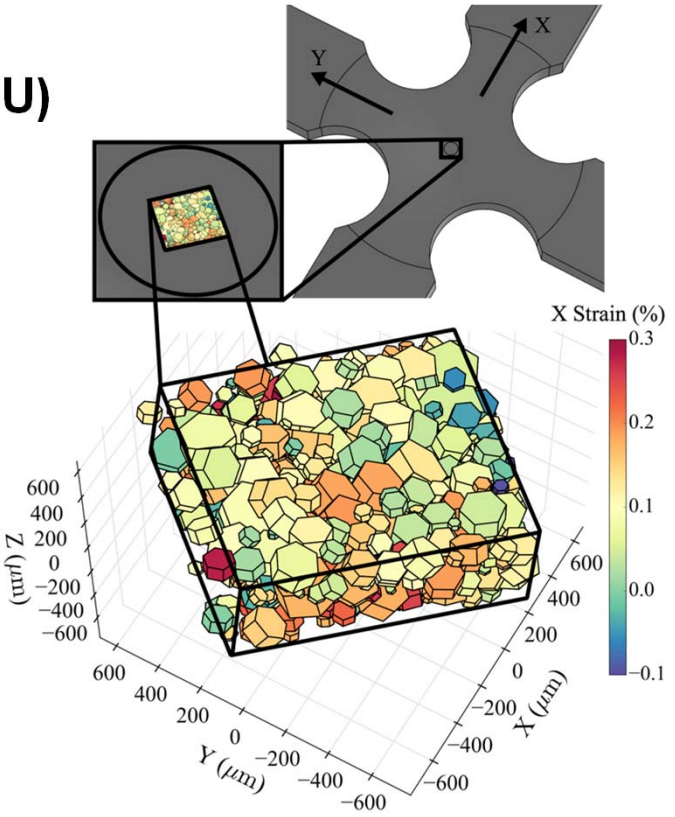
- **Determined plastically hard and soft grain orientations relative to full multiaxial stress tensors.**

Significance and Impact

- **Provided mechanistic insight into load multiaxiality dependence of dwell fatigue as it applies to cold compressor discs in jet engines.**

Research Details

- **Performed in situ high energy diffraction microscopy planar biaxial dwell fatigue experiments to generate micromechanics data.**



Reconstruction of grains showing positions, volumes, orientations, and the X component of the lattice strain tensor.