Experimental Validation of the Piezoelectric Triple Hybrid Actuation System (TriHYBAS)

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Piezoelectric Triple Hybrid Actuation System (TriHYBAS)

- Tian-Bing Xu, Xiaoning Jiang, and Ji Su, “High Performance Piezoelectric Triple Hybrid Actuation System (TriHYBAS),” NASA Case # LAR 17618-1
Displacement Profile of TriHYBAS

Applied Unipolar Voltage: 300 V DC bias and 200 Vrms AC at 1 Hz
Displacement Vs. Applied Voltage

Displacement at center of TriHYBAS

Displacement in length direction for positive and negative components

Peak-Peak Displacement at Center (μm)

Applied AC Voltage ($V_{rms}$)

$V_{DC} =$ Peak of AC, $V_{peak} = 2V_{rms}^{0.5}$

Displacement (μm)

Applied AC Voltage ($V_{rms}$)

$V_{DC} =$ Peak of $V_{AC}$

28 mm Long Fiber Composite

Negative Strain Multilayer