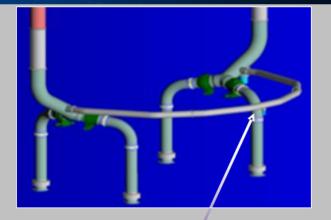
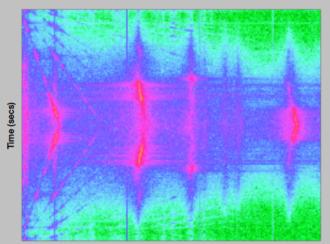


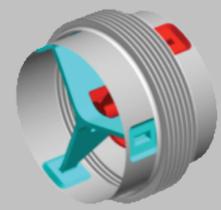
## **Flow Induced Vibration of Metal Bellows**

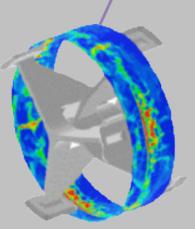


- Flexible joints with metal bellows are susceptible to flowinduced vibration.
- Computational Fluid Dynamics and highly instrumented waterflow testing of an SLS Ball Strut Tie Rod Assembly (BSTRA) are performed to characterize unsteady flow's participation in closed-loop fluid structure interaction.











Spectrogram of bellows alternating strain during SLS BSTRA Flex Joint Waterflow Test

BSTRA flexible joint with metal bellows covered by partial flowliners CFD velocity magnitude for BSTRA flexible joint with partial flowliners