



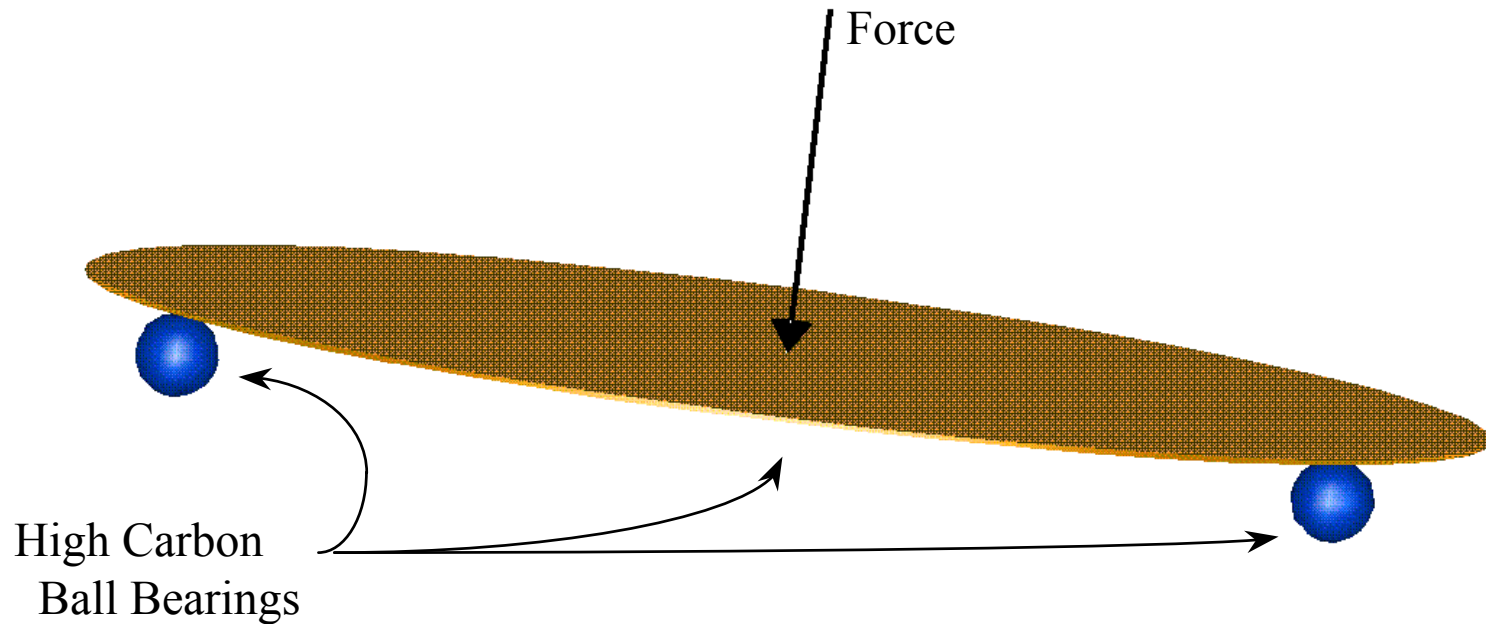
# Experimental Modal Analysis

- Excitation applied by acoustic wave propagation.
- Response measured with capacitance gage.
- Force and response stored on HP signal analyzer.
- Mode shapes reconstructed with commercial software.



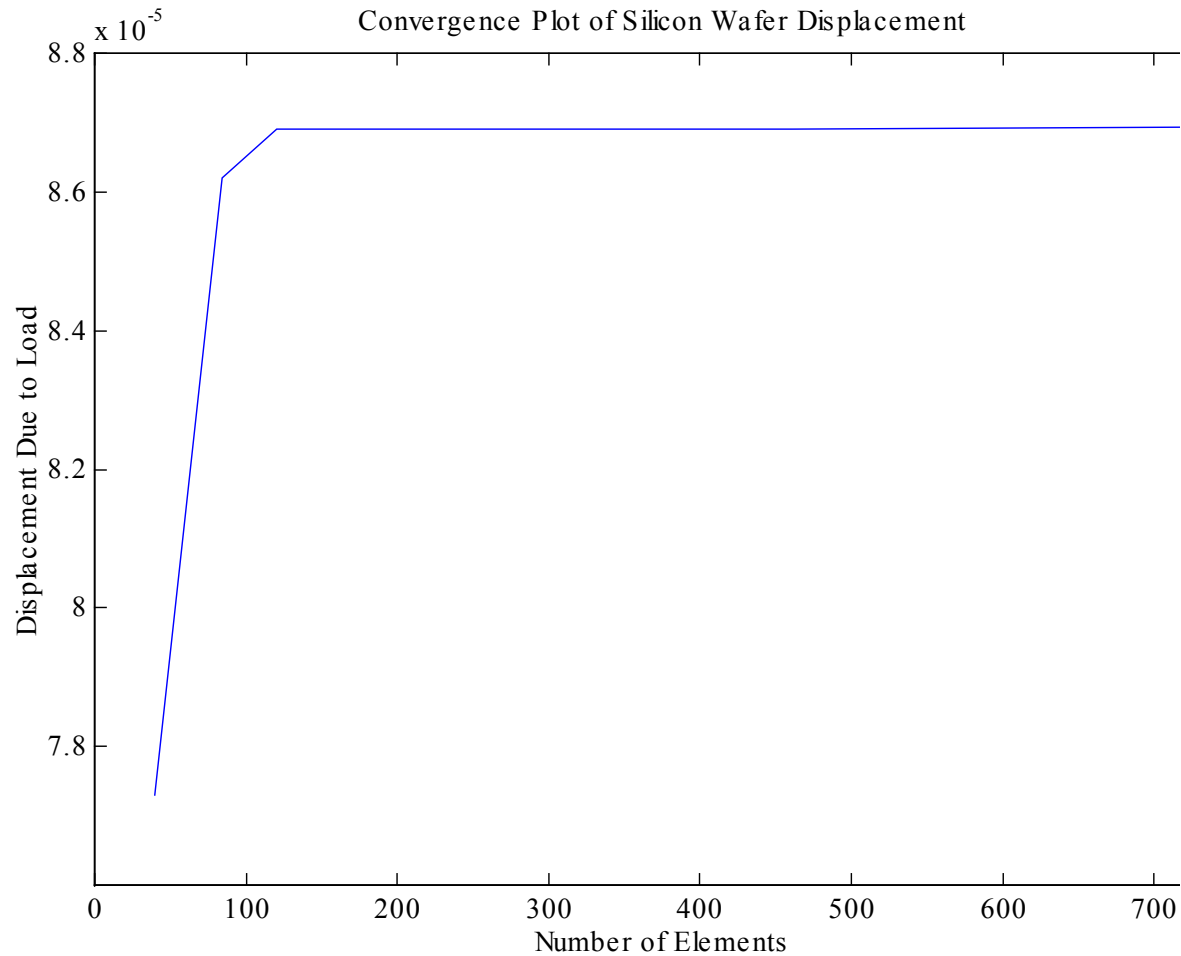
# Finite Element Analysis

- Experimental confirmation of element properties



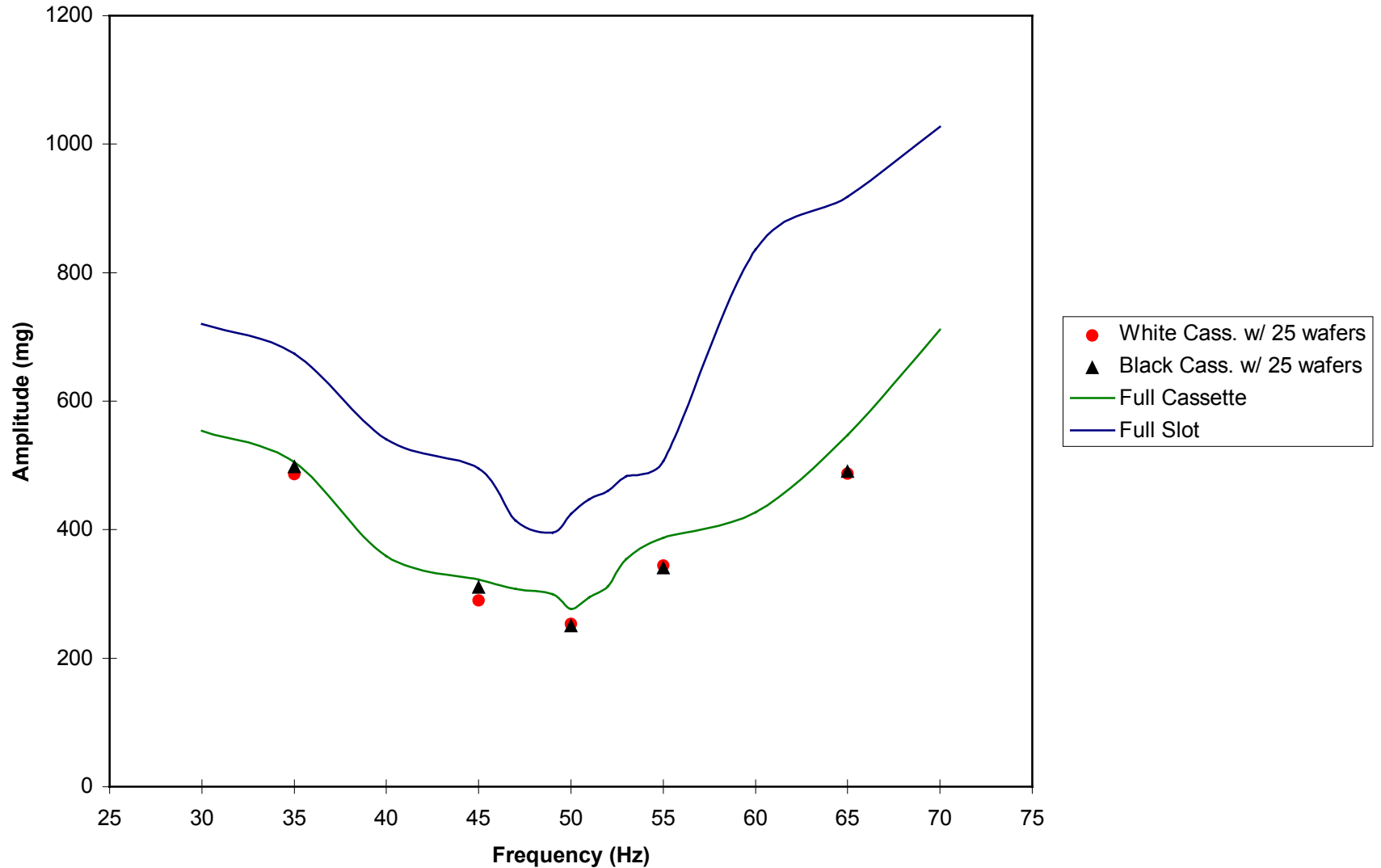


# Convergence of Model



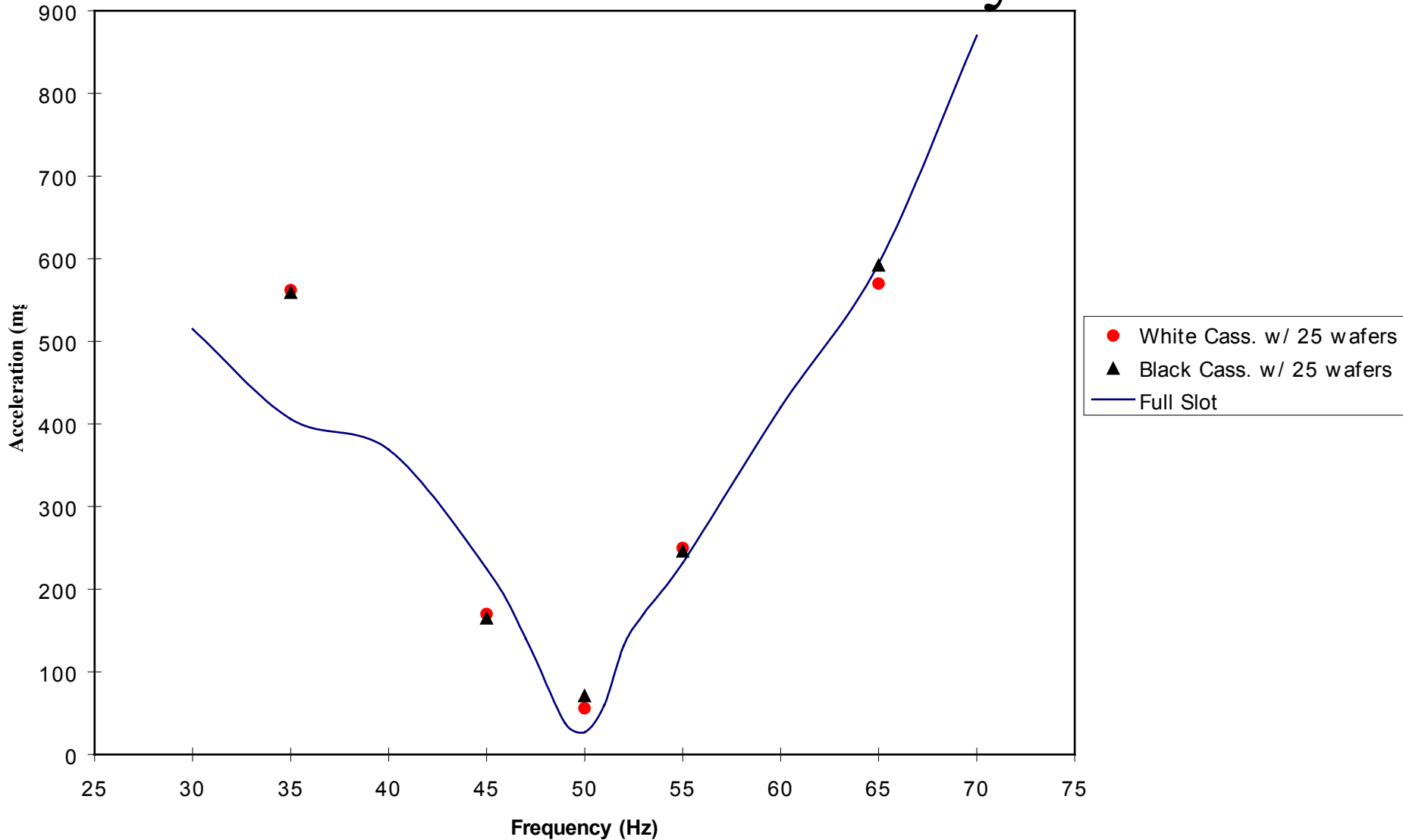


# X Direction Stability



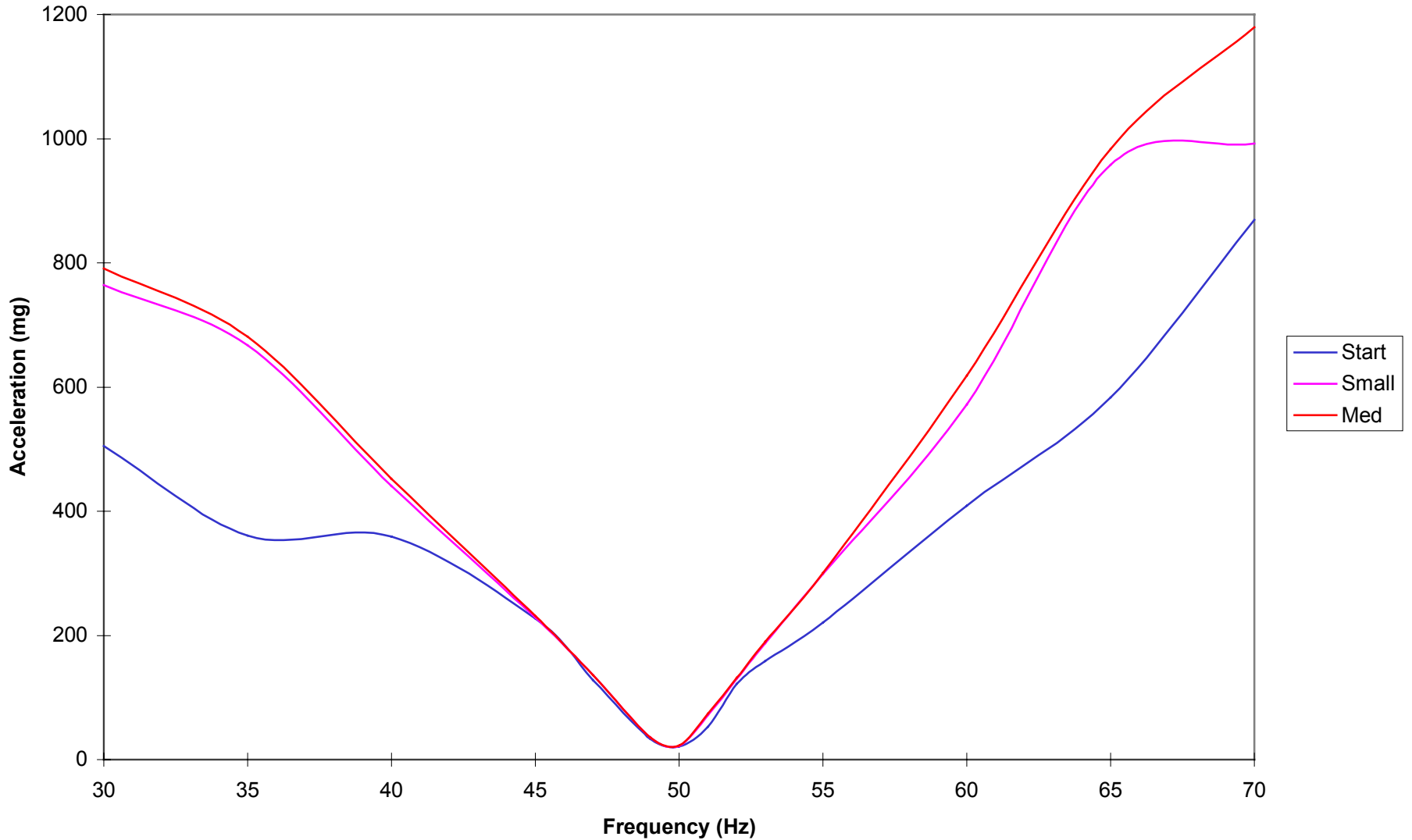


# Z Direction Stability





# Vertical Stability





# Recommendations

- Suggest machine vibration limits to vendors.
- Reduce transmission of vibration to cassettes.
- Use isolation devices on vacuum pumps and processing machines.
- Redesign cassette for 300 mm wafer.