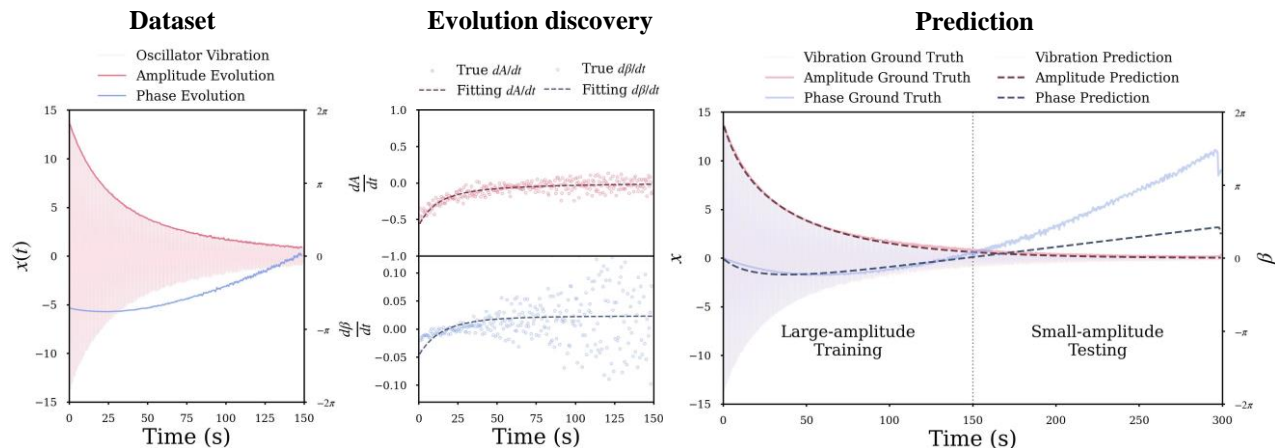


a.

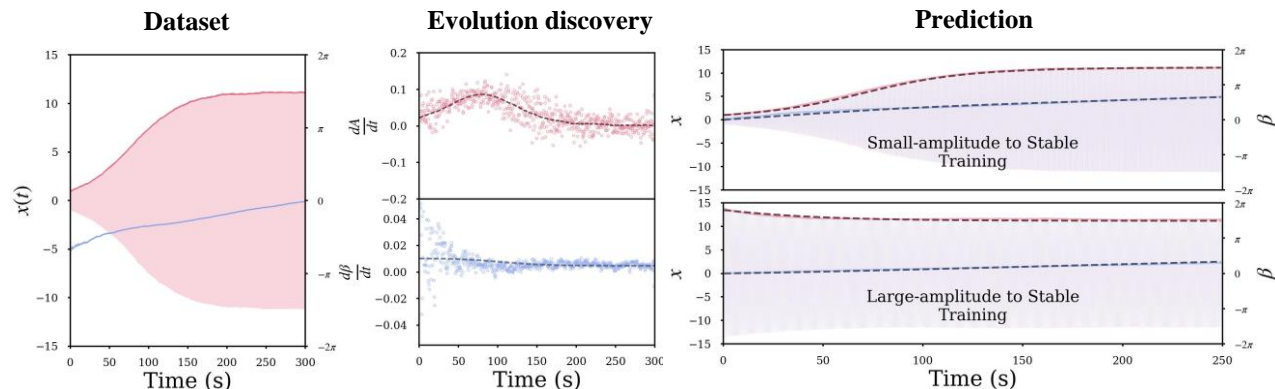
Free attenuation response



$$\text{Discovered: } \ddot{x} + 162.93x + 3.59 \times 10^{-2}\dot{x} - 1.26 \times 10^{-2}x^3 + 2.12 \times 10^{-6}\dot{x}^3 = 0$$

b.

Vortex induced Vibration



$$\text{Discovered: } \ddot{x} + 163.34x - 4.66 \times 10^{-2}\dot{x} - 1.54 \times 10^{-2}x^3 + 4.46 \times 10^{-6}\dot{x}^3 - 8.34 \times 10^{-11}\dot{x}^5 = 0$$