Conclusions:

1. Two absorbers vibrate at different amplitudes during a certain excitation frequency range even if they are identical.

2. Pitchfork bifurcation occurs. Hopf bifurcations occur on specific branches, followed by amplitude modulated motions.

3. The dual-absorber system does not always exhibit the same characteristics as the single-absorber system.
To investigate nonlinear vibrations of an elastic structure with multiple identical nonlinear elements such as strings and beams.

**Goal of Study**

To investigate nonlinear vibrations of an elastic structure with multiple identical nonlinear elements such as strings and beams.

Consider the elastic structure with three identical beams. When the structure is subjected to harmonic excitation, only one beam vibrates at large amplitude. This corresponds to a localization phenomenon.
Intrinsic Localized Mode (ILM)

Multiple nonlinear identical units, connected with weak springs, under sinusoidal excitation

Only some units vibrate at large amplitudes.

Examples of systems with multiple identical units

Time histories for a three unit system show that only one mass vibrates at a large amplitude. This confirms the appearance of the ILM.
Appearance of two new resonance peaks is a problem to be solved.

Three resonance peaks can be suppressed.