

Project Description

- **Main Objective: To study:**
 - Character of radiation modes
 - Calculation methods of acoustic radiation modes, and to apply the acoustic radiation mode in:
 - Noise source identification
 - Structural optimization for minimizing noise radiation.
- **Application: Product design, source identification**

Approach

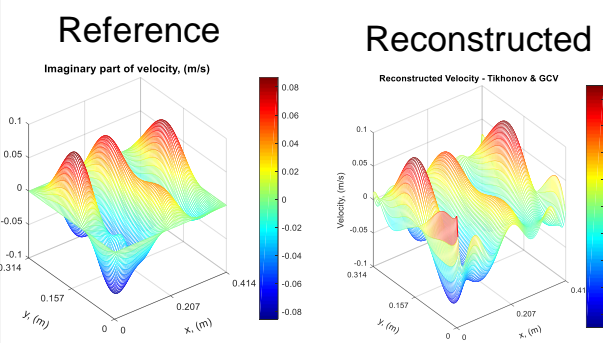
- **Analytical Modeling**
 - Using virtual case study to assess the feasibility of using acoustic radiation modes in the source identification application (inverse method)
 - Applying acoustic radiation modes in structural design for noise reduction
- **Numerical Methods**
 - Proving that acoustic radiation modes can be obtained in different ways
- **Experiments**

Conclusions

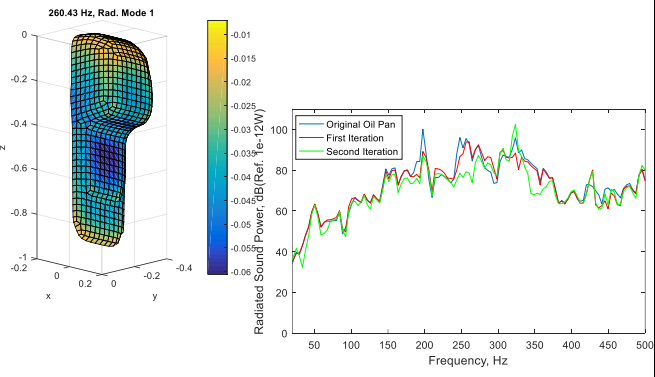
- **Acoustic radiation modes:**
 - Have shown the ability to not only identify the source, but also the sound power distribution in the vibration patterns
 - Have been successfully applied in structural design for reducing noise
 - Can be calculated in a way with reduced effort

Results

Source Identification



Structural Design



Summary: Acoustic radiation mode is an effective tool in structural design and noise source identification.