Simulating a Cylindrical Cantilever using COMSOL to potentially replace Damage Hair Cells in the Cochlea

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On average, three of every thousand people in the United states are functionally deaf.

Damage of the hair cells in cochlea is the most common cause of hearing loss.

No hair cells, no electrical signal to the brain
What is being done

- Cochlear implants
  - Invasive, expensive, and parts need to be replace.

- Hearing aids

- No hair cell treatment or surgery
Approach

- Used a computer program (COMSOL Multiphysics)
- Simulated a cylindrical cantilever
- Measured frequency output response
- Measured current