

# An Introduction to Resonator Science

This course is designed to help teachers understand the use of resonators to prevent surface waves. Teachers will learn about the different types of resonators and how experts select the right resonator for a given application. Dr. Shokouhi's research at PenSul, Penn State's Ultrasonics lab, focuses on the development of next generation technologies with a focus on waves..

In this workshop, teachers will learn how to use models that improve the use of and configuration of resonators to prevent surface waves. This will be a one week asynchronous workshop, that will include 10 hours of self-paced learning in conjuncture with a one day zoom meeting. Teachers will leave the workshop with tools to teach a unit on resonators, including agent-based models, videos, and a practical guide to this hands on topic.

**Self-paced learning starts May 30th**

One day remote workshop, June 6, 2022. 9:00-3:30 PM

Contact [Kitmartin@psu.edu](mailto:Kitmartin@psu.edu) for information or sign up online at [the introduction to resonator science](#).



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Center for Science and the Schools  
Penn State College of Education

## What is a surface wave?

A surface wave is a type of wave that travels along the surface of a medium, rather than through it.

## What is situations where a surface wave causes a problem?

A surface wave can cause a problem if it travels along the surface of a medium that is carrying an electrical current. In this case, the surface wave can cause interference with the current, which can lead to electrical problems. Additionally, when a surface wave happens on earth we call it an earthquake, which damages property, buildings and infrastructure.

Resonators are passive, new technology that can prevent surface waves and thus stop earthquakes and technological interference.

### Benefits:

- **Teachers will receive a \$500 stipend for attendance and implementation.**
- **Participating teachers are eligible for \$250 in supplies to assist with implementing their unit.**
- **Act 48 Credits will be provided upon request.**



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