



DIPARTIMENTO DI SCIENZE  
MATEMATICHE E INFORMATICHE,  
SCIENZE FISICHE E SCIENZE DELLA TERRA  
Dottorato di Ricerca in Fisica

## Appunti di Fisica '21

6 dicembre ore 15:30

su Microsoft Teams "Seminari di Appunti di Fisica"

### Sound vs light: the story of a catch up

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Centuries of development have given us multiple tools for the precise delivery of light. We call them lenses, mirrors or holographic filters...and they are so common that each of us has an advanced light control system in his/her pocket.

But there is no such a thing for sound. Localised sound delivery still requires headphones. Acoustic lenses are bulky and therefore not usable in practice. Or, are they?

In this talk I will describe how metamaterials are helping acoustics to bridge this technology gap, building on interference and diffraction. We will look together at different applications, including manipulation, and discuss how metamaterials are playing a key role in them.