Chez Pierre

Presents ...

Wednesday, November 30, 2022

12:00pm Noon

Duboc Room – 4-331

Special Chez Pierre Seminar

Andrea Alù, CUNY

"Extreme Control of Light and Sound with Metasurfaces“

In this talk, I discuss our recent research activity in photonics, acoustics and polaritonics, showing how suitably structured surfaces can open exciting avenues to enable extreme wave phenomena for light and sound manipulation at the nanoscale. In particular, I will discuss the role of broken symmetries, geometrical rotations, and of strong wave-matter interactions in polaritonic systems to open new opportunities for classical and quantum wave manipulation. Our findings open opportunities to tailor waves in robust and efficient ways, controlling their propagation, breaking Lorentz reciprocity and enabling topological order and phase transitions. In the talk, I will discuss the fundamentals of these concepts, and their impact on practical technologies, from imaging and sensing to computing.

Andrea Alù is a Distinguished Professor at the City University of New York (CUNY), the Founding Director of the Photonics Initiative at the CUNY Advanced Science Research Center, and the Einstein Professor of Physics at the CUNY Graduate Center. He received his Laurea (2001) and PhD (2007) from the University of Roma Tre, Italy, and, after a postdoc at the University of Pennsylvania, he joined the faculty of the University of Texas at Austin in 2009, where he was the Temple Foundation Endowed Professor until Jan. 2018. Dr. Alù is a Fellow of NAI, AAAS, IEEE, OSA, MRS, SPIE and APS, and has received several scientific awards, including the Blavatnik National Award in Physical Sciences and Engineering, the IEEE Kiyo Tomiyasu Award, the Vannevar Bush Faculty Fellowship, and the NSF Alan T. Waterman award.