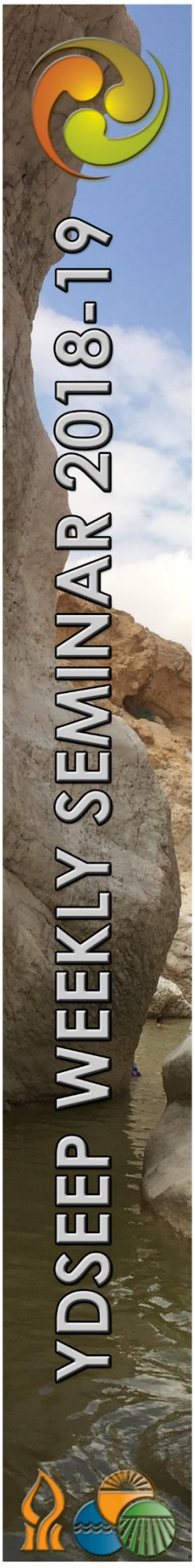

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Resonant behavior in forced inhomogeneous oscillatory media and implications to the inner ear

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Abstract:

Resonant oscillatory spatiotemporal dynamics is abundant in many physical, chemical and biological systems, and results in a variety of phenomena such as spiral waves, localized oscillations, and labyrinthine standing waves. Yet, once spatial inhomogeneity is introduced, as in the case of the inner ear, new questions arise. In the auditory system, the non-uniformity appears to be crucial, since it enables the discrimination between incoming frequencies. Specifically, the non-uniformity is attributed to playing a role in creating localized vibrations, whose location and shape is dependent on the frequency of the incoming sound wave. This behavior motivated us to study the factors that affect the shape of the locally amplified oscillations that arise in the framework of forced inhomogeneous oscillatory media. New insights obtained from our analysis will be presented in this talk.

Date & Location:

Tuesday, June 18, 2019, 11:00

Lecture room, Physics Building (ground floor)