

Moving objects by acoustic wave-momentum shaping  
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Abstract: The ability of wave fields to exert forces on objects is a fascinating property. It has enabled the creation of photonic or acoustic tweezers, potential wells that trap particles at specific locations using light or sound, and can even move them around. In a complex medium, however, such trapping strategy proves itself to be difficult because the field forming the trap is a speckle that changes when the object or its environment moves. This talk will discuss an alternative method, wave-momentum shaping, that relies on pushing instead of trapping, with promising preliminary experimental results in inhomogeneous or time-varying environments. The injected wavefront are determined from far-field measurements of the Wigner-Smith operator. The talk will discuss the method from basic principles and results obtained so far.

More information at <https://www.epfl.ch/labs/lwe/page-142113-en-html/acoustic-micromanipulation/>