



Innsbruck Physics Colloquium

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Metamaterials and Coordinate Transformations

Starting with the Calderón tomography problem, I will review the principles and a bit of the history of using coordinate transformations for design, e.g., of invisibility cloaks. I will illustrate the current experimental state-of-the-art of cloaking in optics, thermodynamics, and mechanics. In mechanics, novel types of metamaterials are required, breaking the scale invariance but recovering the form invariance of the equations of motion. Real-world applications include invisible metal contacts on solar cells to increase their conversion efficiency, invisible metal contacts on diffusive OLEDs to homogenize their light emission, and feedthroughs in mechanical support structures, leaving the support properties effectively unchanged.



Tuesday, 2.4.2019, at 17:15 h in lecture hall C