Mechanical metamaterials for cloaking
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We review our experiments on mechanical metamaterials for cloaking. This includes two-dimensional graded laminate elastic metamaterials for broadband cloaking of flexural waves in thin plates, three-dimensional pentamode metamaterials and modifications thereof, e.g., for three-dimensional core-shell cloaks, and direct coordinate transformations of discrete hexagonal lattices. We suspect that the latter mimic inhomogeneous and anisotropic Cosserat metamaterial distributions. Polymer structures with sub-micrometer feature sizes are fabricated by galvo-scanner dip-in three-dimensional direct-laser-writing optical lithography, macroscopic structures by a commercially available three-dimensional printer.