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Mechanical modes of an ‘Alligator’ photonic crystal waveguide.
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of Technology — We present our experimental observations on opto-mechanical
coupling for guided optical light fields of an ‘Alligator’ photonic crystal waveguide
(APCW). Quasi-odd harmonics of the fundamental mechanical mode are observed
for optical light frequency in the waveguide regime, while both quasi-odd and quasi-
even harmonics are observed for optical light frequency near the band-edge of the
APCW. A novel theoretical model of transduction mechanisms is developed to ex-
plain the experimental observations.

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