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Uniaxially Strained Graphene Resonators HIRAM CONLEY, KIRILL BOLOTIN, Vanderbilt University — Strained graphene allows one to explore the connection between the mechanical and electrical properties of graphene. Exploring this interplay between the mechanical and electrical properties in graphene may enable tuning graphene's mechanical and electrical properties as well as opening up new exotic electronic states. We have developed a technique to fabricate uniaxial strained graphene transistors and mechanical resonators with strains as high as 0.5%. We demonstrate how strain perturbs both the mechanical and electrical properties of graphene, highlighted by the strain quenching of flexural phonons.

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