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Pseudospin dephasing in relaxed shape armchair graphene nanoribbons SANJAY PRABHAKAR, RODERICK MELNIK, Wilfrid Laurier University, LUIS BONILLA, Universidad Carlos III de Madrid — In this presentation, we argue that the Zeeman pseudospin splitting energy might not be neglected for smaller widths of the graphene nanoribbons (GNRs). Mathematically valid study shows that the pseudospin splitting energy breaks the symmetry of degeneracy due to ripple induced Zeeman effect in GNRs originating from electromechanical effects. We estimate the spin relaxation time caused by in-plane phonon modes for possible application in straintronics and quantum information processing. We acknowledge Natural Sciences and Engineering Research Council of Canada and Canada Research Chair programs for their financial support.

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