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Spectroscopy of snake states using a graphene Hall bar SLAVISA MILOVANOVIC, MASSOUD RAMEZANI MASIR, FRANCOIS PEETERS, Univ of Antwerp — A novel approach to observe snake states in a graphene Hall bar containing a pn-junction is proposed. The magnetic field dependence of the bend resistance in a ballistic graphene Hall bar structure containing a tilted pn-junction oscillates as a function of applied magnetic field. We show that each oscillation is due to a specific snake state that moves along the pn-interface. Furthermore depending on the value of the magnetic field and applied potential we can control the lead in which the electrons will end up and hence control the response of the system.

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