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In-plane anisotropy of NiCo multilayers P. PANYAJIRAWUT, M.S. RZCHOWSKI, University of Wisconsin-Madison — We have grown NiCo magnetic multilayers on Si substrates by sputter deposition. The $Ni_{0.6}$-$Co_{0.4}$ bilayer that repeats to form the multilayer ranges from 2 nm to 12 nm in thickness. The total multilayer thickness ranges from 50 nm to 75 nm. Room temperature vibrating sample magnetometer (VSM) measurements show that the multilayers have in-plane uniaxial magnetic anisotropy with K_u $\sim$1.2x10^5 erg/cc. This is apparently induced during growth by the sputtering geometry, as we also see uniaxial in-plane anisotropy in individual 30 nm thick Ni (K_u $\sim$0.3x10^5 erg/cc) and Co (K_u $\sim$2.9x10^5 erg/cc) sputtered films. However the multilayer anisotropy is more complex as it arises from an interaction between the Ni and Co layers, with the Ni and Co layer magnetizations to first approximation rotating together.

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