

FIG. S1: (a) Force-deflection data measured at multiple locations along the length of the cantilever. The data at the tip shows only a very slight deviation in response when transitioning from the approach segment to active loading, due to the very low stiffness increment relative to the spring stiffness. The data at a location close to the root of the cantilever shows higher stiffness relative to the approach segment. (b) Measured compliance as a function of beam length, as described by Equation 6