Supplementary Materials for

Fast grip force adaptation to friction relies on localized fingerpad strains

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Fig. S1
Supp. Figure 1: Modeling the maximum shear strain for different levels of grip force. A] Simulations of the maximal shear strain distribution inside the contact area for three different levels of GF (shown in three rows). The GF was adjusted such that the stick radius was 0.55, 0.65 or 0.75 for the normal trials under high (left, \( \mu = 1 \)) and low (right, \( \mu = 0.85 \)) friction. The GF was unchanged for post-change trials, resulting in a drop (left) or an increase (right) of the stick radius. Four concentric circles were used to average the strains into four circular bands. B] Strain values averaged across the circular bands for normal (black) and post-change trials (red = post-change low, blue = post-change high). Most of the changes are observed in the two middle circles. The model is based on the analytical solution of the Hertz contact and the Cattaneo-Mindlin solution for partial slip developed in previous work and reported in detail in (17). The simulations also show the asymmetric effect of post-change low vs high on strain changes.