Supplementary Video 2

This video combines data from Figs. 2a, 2c, 2d, and 4b to illustrate that equation (7) accurately predicts the distance between the contact point location as determined by edge-mode simulations (frictionless) and contact point mode simulations (which include friction). **(Top left)** Two views of the rat whisking against a peg.   The black traces are the experimentally-tracked whisker shape. The dashed-cyan traces shows the whisker shape as predicted by contact point simulations (with friction), while the purple dashed-dot traces show the whisker shape as predicted by edge-mode simulations (frictionless). Results from the contact-point mode simulations match the experimentally-tracked whisker in both views, but results from edge-mode simulations often deviate from the tracked whisker in the front view. **(Bottom)** From top to bottom, the three traces show the normal force (F_N), the arc length of contact ($s_{applied}$), and the vertical position of contact along the peg ($z_{contact}$). The purple traces show results from edge mode simulations, and the blue traces show results from contact-point mode simulations.   Equation (7) depends on both F_N and $s_{applied}$, as calculated in edge-mode. The difference between the two $z_{contact}$ traces is termed z_{error}. **(Top right)** This subplot shows that equation (7) offers a good prediction for experimentally-measured z_{error}.