Description: The supplementary files contain three separate videos and their corresponding captions.

Supplementary Video 1
The edge-mode of the whisker model (frictionless) is used to simulate a whisker (black) slipping against an edge. Oblique and top views are shown. The contact point, represented by a red dot, slips both along the edge and along the whisker arc length. The history of the slip along the whisker arc length is shown in blue. The gray trace represents the position and orientation of the whisker had not made contact with the object. The contact point (red) and slip history (blue) are shown at the corresponding arc lengths on the gray whisker.

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 (), the arc length of contact (, and the vertical position of contact along the peg (). 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 and , as calculated in edge-mode. The difference between the two traces is termed . (Top right) This subplot shows that equation (7) offers a good prediction for experimentally-measured .

Supplementary Video 3.
The frictionless ("edge mode") model is used to simulate a rat protracting the entire vibrissal array against and past a vertical peg. Each whisker is shown in gray until it makes contact with the peg, at which point its color changes to red. Once a whisker slips past the peg, it is shown in green.

Size: The total size of the file is 1.65 MB

Player Information:
Any player that will open an mp4 or m4v file, for example: Windows Media Player, QuickTime, VLC, iTunes, etc.

Packing list:
Slip_Vid1.mp4
Slip_Vid2.m4v
Slip_Vid3.m4v
Attached captions:
Slip_Vid1_caption.pdf
Slip_Vid2_caption.pdf
Slip_Vid3_caption.pdf

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