



Figure 5 - figure supplement 4 | Optogenetic stimulation of Purkinje cells increases whisker protraction following air-puff stimulation

A. Air-puff stimulation of the whisker pad induces reflexive touch-induced whisker protraction. **B.** This protraction is enhanced when the sensory stimulus is paired with optogenetic stimulation of PCs. These two panels show whisker traces from a *Pcp2-Ai27* mouse that expresses ChR2 specifically in its PCs. An optic fiber with a diameter of 400 μm was placed on the surface of the cerebellum

centrally at the fissure between crus 1 and crus 2 (**C**). Optogenetic stimulation of these mice results in increased simple spike firing. Stacked line plots of the whisker traces of 7 mice tested in this way following air-puff stimulation alone (**D**) and in combination with PC stimulation (**E**). **F.** The increased PC activity correlated with stronger protraction as evidenced by the differential traces. The inset shows a comparison of the maximal protraction (Protr.) under the two stimulus conditions; *** $p < 0.001$ (paired t test). See also Source Data File.