



Figure S1: Examples of raw and convolved results of an electrophysiological MLG2 response and a behavioural escape response to stimuli 7 (Table 1). **(A)** Upper trace (black): intracellular recording. Middle trace (blue): Estimate of the instantaneous firing frequency obtained by smoothing the response with 50 ms square window. Bottom trace (red): Stimulus angular size $\theta(t)$. **(B)** Upper trace (black): running speed recording from one animal; (green) estimate of the instantaneous speed obtained by smoothing the response with 100 ms square windows. Bottom trace (red): Stimulus angular size $\theta(t)$. Dotted vertical lines signal the beginning of the stimulus expansion.