

Abstract Submitted  
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**Adaptation to Variance of Stimuli in Drosophila Larva Navigation**<sup>1</sup> JASON WOLK, RUBEN GEPNER, MARC GERSHOW, New York Univ NYU — In order to respond to stimuli that vary over orders of magnitude while also being capable of sensing very small changes, neural systems must be capable of rapidly adapting to the variance of stimuli. We study this adaptation in Drosophila larvae responding to varying visual signals and optogenetically induced fictitious odors using an infrared illuminated arena and custom computer vision software. Larval navigational decisions (when to turn) are modeled as the output a linear-nonlinear Poisson process. The development of the nonlinear turn rate in response to changes in variance is tracked using an adaptive point process filter determining the rate of adaptation to different stimulus profiles.

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