Implementation of attentional bistability of the dragonfly visual neurons in an intelligent biomimetic agent
— Final Report —

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1 Elementary Small Target Motion Detector

In our initial specification, one of our tasks was to connect the retina of our dragonfly to the CSTMD neurons. Having researched how this occurs in real dragonflies, we discovered that we would have to include a layer of neurons that preprocesses the input from the retina before passing it on to the CSTMDs, named elementary small target motion detectors (ESTMD) (WIEDERMAN 2008). While one of the purposes of the CSTMD seems to be to give the ability to select one target among many in the visual field (WIEDERMAN 2013), the function of the ESTMDs seems to be that of identifying small moving targets, even against a cluttered, moving background (WIEDERMAN 2008).

1.1 Methodology

Our research revealed that the ESTMDs actually consist of several layers of neurons required to perform their function