



Figure 5—supplement 1: Modular model of the HOG network including derivative action in the fast pathway and the interactions between the fast and slow pathways. The slow pathway is modelled as a first-order filter of the error. The fast pathway also has a first-order filter of the error and derivative action: an amplified and filtered time-derivative of the input. Cross-inhibition between the two pathways consists of negative feedback of the filtered output of the slow pathway on the fast pathway and negative feedback of the filtered derivative action of the fast pathway on the slow pathway. Hog1 is the sum of the outputs of both pathways after the cross-inhibition and feeds into an integrator that is amplified and filtered before feeding into glycerol. The Hog1-independent pathway responds proportional to the error and directly feeds into glycerol. Glycerol negatively feeds back on the input to give the error. All parameter values are Fig. 5—supplement 2.