Table 1 Descriptions, values, and references of parameters used.

Symbol	Description	Value and unit	Justification
l_+	DNA-protein association rate	$2.22 \times 10^{-2} \, \mu M^{-1} \sec^{-1}$	Preliminary data from SPR analysis
l_-	DNA-protein dissociation rate	$4.11 \times 10^{-5} \sec^{-1}$	Preliminary data from SPR analysis
k_+	protein-protein association rate	$1.01 \times 10^{-1} \, \mu M^{-1} \sec^{-1}$	[58]
k_-	protein-protein dissociation rate	$8.47 \times 10^{-4} \sec^{-1}$	[58]
V_A V_T V_{Bmax} V_{Bmin}	production rate of ARM Production rate of TCF Maximum production rate of BRK Minimum production rate of BRK	$10^{-7} - 10^{-1} \, \mu M \sec^{-1}$ $10^{-5} - 10^{-3} \, \mu M \sec^{-1}$ $10^{-4} - 10^{-1} \, \mu M \sec^{-1}$ $10^{-6} - 10^{-3} \, \mu M \sec^{-1}$	Covers wide range of production where minimum corresponds to endogenous expression and maximum corresponds to over-expression via Gal4 activation
K_{Amax} K_{Amin}	maximum and minimum degradation rates of ARM	$10^{-2} \sec^{-1}$ $10^{-4} \sec^{-1}$	Covers wide range where maximum degradation results in no accumulation of Arm (no WG signaling) and minimum degradation mimics WG signaling.
K_{degB}	Degradation rate of BRK	$10^{-3} \sec^{-1}$	Rate of degradation computed from production rate and initial value of BRK to achieve steady state
γ_A γ_B	EC$_{50,}$ effective concentration at 50% (1) for feedback of *wg* activation on degradation of A (2) for feedback of *dpp* repression on production of B	$10^{-2} - 10^{-4} \, \mu M$	Values of gammas are chosen so that maximal feedback occurs at the halfway point between the maximum and minimum response values.
m and *n*	Hill coefficients	1	Hill coefficient of one is commonly used to allow a plausible rate of transition from maximum to minimum values e.g. [59,60]
$(e_1 e_2)_0$	total DNA binding sites for repression	$10^{-3} \, \mu M$	Value corresponds to 2 sites /cell. Cell volume from [61]
$(e_3)_0$	total DNA binding sites for activation	$10^{-3} \, \mu M$	Value corresponds to 2 sites /cell. Cell volume from [61]
f_1 and f_2	cooperative association and dissociation factors	10 and 1	Reflects cooperative interactions occurring 10 fold faster than non cooperative reactions

Legend: A brief description of each of the parameters used in modeling is given along with range of values used and references that validate those values.