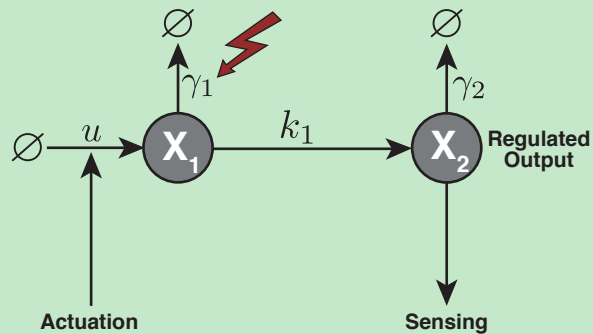
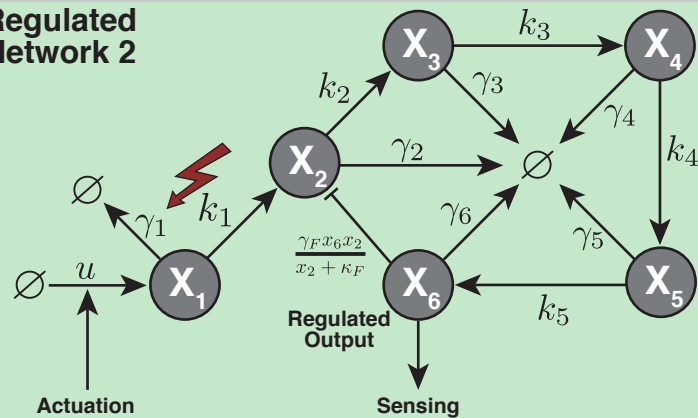
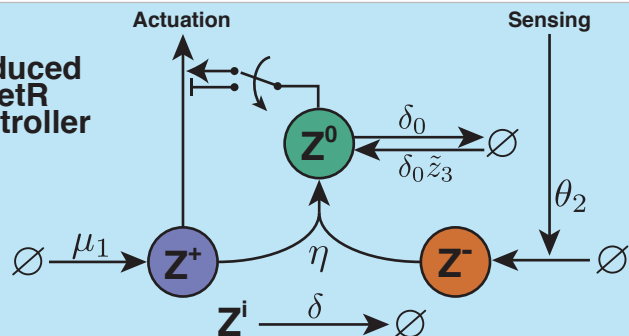


**a****Regulated Network 1****Regulated Network 2****b****Reduced TetR Controller****Control Action**

$$u = \mathcal{U}(z^+, z^0) = \frac{k\tilde{z}_2 + k'\tilde{z}_3}{1 + \frac{\tilde{z}_1}{\kappa_u}}$$

**Algebraic Equations**

$$\begin{cases} (z^0 - 2\tilde{z}_1 - \tilde{z}_3)^2 = \kappa_3\tilde{z}_1 \\ (z^+ - 2\tilde{z}_2 - \tilde{z}_3)^2 = \kappa_1\tilde{z}_2 \\ \kappa_1\kappa_3\tilde{z}_1\tilde{z}_2 = \kappa_2^2\tilde{z}_3^2 \end{cases}$$

**c**