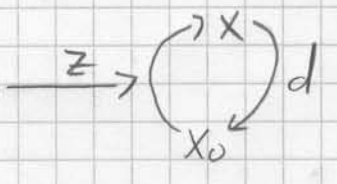
Vereinfachter Max-Zyklus (ohne Autokatalyse)

$$\boxed{X_0 + X = x_g}$$



$$\dot{x} = (x_g - x) \cdot z - dx$$

$$z = \bar{z} + \sigma \Omega(t)$$

$$\langle \Omega \Omega \rangle = \delta(\tau)$$

$$\dot{x} = \underbrace{\left[\bar{z}(x_g - x) - dx\right]}_{f(x)} + \underbrace{\left[\sigma(x_g - x)\right]}_{g(x)} \Omega(t)$$

$$g^2 = \sigma^2 (x_g - x)^2$$

$$\frac{d}{dx} g^2 = \sigma^2 2 (x_g - x)(-1) = -2\sigma^2 (x_g - x)$$

$$A(x) = \left[\bar{z}(x_g - x) - dx\right] - \frac{\varepsilon}{2} \sigma^2 (x_g - x)$$

$$B(x) = \frac{\sigma^2}{2} (x_g - x)^2$$

$$A(x) = \underbrace{\left(\bar{z} x_g - \frac{\varepsilon}{2} \sigma^2 x_g\right)}_{= A_0} + \underbrace{\left(-\bar{z} - d + \frac{\varepsilon}{2} \sigma^2\right)}_{=: \alpha} x = A_0 + \alpha x$$

$$B(x) = \frac{\sigma^2}{2} \left(x_g^2 - 2 x_g x + x^2\right)$$

$$\left.\begin{array}{l} A(x \to 0) \to A_0 \\ B(x \to 0) \to \frac{\sigma^2 x_g^2}{2} \end{array}\right\} \Rightarrow I(x \to 0) = \frac{2A_0}{\sigma^2 x_g^2} \underbrace{\int_{x_{min}}^{x} 1 \, ds}_{(x - x_{min})}$$

$$\Rightarrow P(x \to 0) = \frac{2N}{\sigma^2 x_g^2} \exp\left[\left(\frac{2A_0}{\sigma^2 x_g^2}\right)(x - x_{min})\right] \sim e^{cx}$$

Neue Variable: $x_0 = x_g - x$

$$A(x_0) = \left[\bar{z}\, x_0 - d(x_g - x_0)\right] - \frac{\varepsilon}{2}\sigma^2 x_0$$

$$B(x_0) = \frac{\sigma^2}{2} x_0^2$$

$$A(x_0) = \underbrace{(-d x_g)}_{A_0'} + \underbrace{\left(\bar{z} + d - \frac{\varepsilon}{2}\sigma^2\right)}_{\alpha'} x_0 = A_0' + \alpha' x_0$$

$$\left.\begin{aligned} A(x_0 \to 0) &\to A_0' \\ B(x_0 \to 0) &\to \frac{\sigma^2}{2} x_0^2 \end{aligned}\right\} \Rightarrow I(x_0 \to 0) = \frac{2A_0'}{\sigma^2 x_g^2} \underbrace{\int_{x_0^{min}}^{x_0} s^{-2}\, ds}_{-\left[s^{-1}\right]_{x_0^{min}}^{x_0}}$$

$$I(x_0 \to 0) = -\left(\frac{2A_0'}{\sigma^2 x_g^2}\right)\left(\frac{1}{x_0} - \frac{1}{x_0^{min}}\right)$$

$$P(x_0 \to 0) \to \frac{2N}{\sigma^2} \frac{1}{x_0^2} \exp\left[-(\ldots)\left(\frac{1}{x_0} - \frac{1}{x_0^{min}}\right)\right]$$

$$\Rightarrow \text{Kein PL}$$