

Momenter

↙ middelværdi

$$X: \mu_x = E[X] = \int x f_x(x) dx$$

$$\begin{aligned}\sigma_x^2 &= V[X] = E[(X - \mu_x)^2] = \\ &= E[X^2] - \mu_x^2 = \int x^2 f_x(x) dx - \mu_x^2\end{aligned}$$

Tilsvarende for $Y: \mu_y, \sigma_y^2$

Covarians

$$\begin{aligned}\sigma_{xy} &= \text{COV}(X, Y) \stackrel{\text{def}}{=} E[(X - \mu_x) \cdot (Y - \mu_y)] = \\ &= E[XY] - \mu_x \mu_y\end{aligned}$$