COVARIANZA

$$\mathrm{cov}(X,Y) = E[(X-E(X))(Y-E[Y])]$$

$$= E[XY - E[X]Y - XE[Y] + E[X]E[Y]]$$

$$= E[XY] - E[X]E[Y] - \cancel{E[X]E[Y]} + \cancel{E[X]E[Y]}$$

$$= E[XY] - E[X]E[Y]$$

$$\mathrm{cov}(aX+b, cY+dZ) =$$

$$= \mathrm{cov}(aX, cY+dZ) =$$

$$= ac\ \mathrm{cov}(X,Y) + ad\ \mathrm{cov}(X,Z)$$