Correlation and regression

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$$\hat{r} = \frac{covariance_{xy}}{s_x s_y}$$

$$\hat{\beta}_x = \frac{covariance_{xy}}{s_x s_x}$$

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$$\hat{r} = \frac{covariance_{xy}}{s_x s_y} \qquad \hat{\beta}_x = \frac{covariance_{xy}}{s_x s_x}$$

$$\hat{\beta}_x = \frac{covariance_{xy}}{s_x s_x} \cdot \underbrace{\frac{s_y}{s_y}}_{=1} = \underbrace{\frac{covariance_{xy}}{s_x s_y}}_{=\hat{r}} \cdot \frac{s_y}{s_x}$$

$$\hat{\beta}_x = \hat{r}\,\frac{s_y}{s_x}$$

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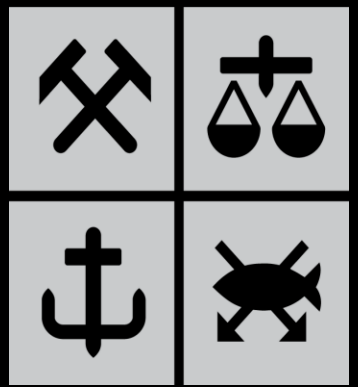

Sondre Hølleland
Geir Drage Berentsen