

r: Pearson's correlation

$t_{n-2,1-\alpha/2}$: t-value with degree of freedom of n-2 and significant of $1-\alpha/2$

$$t_{n-2,1-\alpha/2} = \frac{r}{\sqrt{\frac{1-r^2}{n-2}}}$$

$$t_{n-2,1-\alpha/2}^2 \left(\frac{1-r^2}{n-2} \right) = r^2$$

$$t_{n-2,1-\alpha/2}^2 - r^2 \cdot t_{n-2,1-\alpha/2}^2 = (n-2)r^2$$

$$t_{n-2,1-\alpha/2}^2 = (n + t_{n-2,1-\alpha/2}^2 - 2)r^2$$

$$r = \sqrt{\frac{t_{n-2,1-\alpha/2}^2}{(n + t_{n-2,1-\alpha/2}^2 - 2)}} = \sqrt{\frac{t_{461,0.975}^2}{(463 + t_{461,0.975}^2 - 2)}} = \sqrt{\frac{1.965^2}{(463 + 1.965^2 - 2)}} = 0.09191$$