

d) find a 95% Confidence interval for  $\frac{\sigma_1^2}{\sigma_2^2 + \sigma_2^2}$

$$\frac{L}{L+U} \leq \frac{\sigma_1^2}{\sigma_2^2 + \sigma_2^2} \leq \frac{U}{1+U}$$

$$L = \frac{1}{n} \left( \frac{MS_{Trt}}{MS_E} \left( \frac{F_{0.025, 4, 21}}{1} \right) - 1 \right), U = \frac{1}{n} \left( \frac{MS_{Trt}}{MS_E} \left( \frac{F_{0.975, 4, 21}}{1} \right) - 1 \right)$$

$$U = \frac{1}{5} \left( \frac{0.0242}{0.00438} \left( \frac{0.1170}{1} \right) - 1 \right), L = \frac{1}{5} \left( \frac{0.0242}{0.00438} \left( \frac{3.51}{1} \right) - 1 \right)$$

$$U = 9.2435, L = 0.11756$$

$$U = \frac{9.2435}{10.2435} = 0.902377, L = 0.1148$$

95% Confidence interval for ICC is between 0.1148 & 0.90238