POSTGRADUATE COURSE IN
Evaluation and Comparison of Methods of Measurements
Exercises Day 1

Exercises 1:
The data from the lecture (morning) can be found in 'example 1 wide 4.dta' and 'example 1 long.dta'.

Evaluate observer B (observer 2)
Compare Observer 1 and Observer 2 using the second measurement from each observer.

Exercise 2
International Normalized Ratio (INR) is a standardized measure of coagulate activity in patients stabilized on oral anticoagulant therapy. The INR is the prothrombin time ratio that would have been obtained if the same plasmas had been tested using the WHO primary International Reference Preparation (IRP) 67/40.
INR has been measured in the laboratory (using plasma) and on a devise measuring on full-blood.
The data can be found in 'exercise 2.dta'

Compare the two methods. (absolute or relative?)

Exercise 2a
The accurate assessment of coagulation status is an important part of interventional procedures performed in the cardiac catheterization laboratory. While the traditional clinical means of assessing heparin anticoagulation has been with the activated partial thromboplastin time (APTT), the activated coagulation time (ACT) has come into widespread use in the catheterization laboratory as an assay of whole blood clotting time which can be performed rapidly at the bedside.
The purpose of the present study was to compare and evaluate two types of devices measuring ACT.
On each patient 4 measuring were performed using two devices of the same type for both types.
The data can be found in 'exercise 2a wide.dta' (a1 and a2 are ACT measured by the same type of devises) and 'exercise 2a long.dta' (variable id, time, deviceType and DeviseNR).

Evaluate the two types of devices separately . (absolute or relative?)
Compare the two types of devices using the 'first' device for each type (a1 and b1).

Exercise 3

Intracoronary ultrasound (ICUS) visualizes in vivo the coronary artery lumen. Recordings using ICUS on 29 patient of left anterior descending coronary artery (LAD) were used to measure lumen area . The recordings have been analyzed by two observers; three times each.
The data can be found in 'exercise 3 wide.dta' and 'exercise 3 long.dta'

    Evaluate observer 1 using the first two recordings,
    Compare the two observers using the first recording of each observer.

Exercise 1 (continued):

Perform an analysis of the ln-transformed data (i.e. relative differences and relative variation) and compare the results with the results in the lecture notes from the analysis on the original data (i.e. absolute differences and absolute variation)

Exercise 2a (continued):

Compare the two types of devices using all measurements. (absolute or relative?)

Exercise 3 (continued):

Evaluate the method using the two first measurements for each observer.
Evaluate the method using all three measurements for observers (use xtmixed)