Agreement analysis method in case of continuous variable

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In clinical and epidemiological studies research are very much interested to know the inter - observer variation in a continuous variable or two measurement techniques.

Example. Measurement of blood pressure with pulse oximetry and ausculatory method or measurement of PEFR respiratory diseases by wright peak flow meter and mini wright meter in other case pulse rate of patient measure by two nurse or doctor.

The conventional Statistical method applied for studying the agreement between two method of measuring a continuous variable is computing the Correlation Coefficient (r), but many times this is misleading for this purpose. A change of scale of measurement does not alter r but affect the agreement . In order to overcome this difficulty we will apply five test and in case three will come out to be true we can say that there is good agreement exist between two rater or techniques

1. r – should be very high [$r > .80$]

2. r'' – should be very low [$r'' < .20$]

3. ICC – should be very high [$ICC > .80$]

4. b – should not be different from 1.

5. d – Bias should not be different from zero and limit of agreement and their 95% C.I. should be within acceptable range.