



ASQ CRE Prep course

Lesson IV. B. 2. c.

Reliability Prediction Methods

Tolerance Intervals

The background of the slide is a wide-angle photograph of a mountainous region. The sky is filled with heavy, dark, grey clouds. In the foreground, there are dark, silhouetted evergreen trees. Further back, several mountain peaks are visible, with some showing patches of snow on their higher slopes. The overall atmosphere is moody and atmospheric.

Not the same as confidence intervals – similar, not the same

TOLERANCE INTERVALS

Not the same as confidence intervals

The limits within which a stated proportion of the population is expected, at a given confidence level.

**Applies to individual values, while
Confidence intervals apply to means**

Two-sided Tolerance Interval

At a given tolerance, what interval will contain at least a fraction p of the population?

$$X_{UL} = \bar{X} \pm k_2 s$$

Lower side

At a given confidence, what is the limit such that at least fraction p of the population lies below the limit?

$$X_L = \bar{X} - k_1 s$$

Upper side

At a given confidence, what is the limit such that at least fraction p of the population lies below the limit?

$$X_L = \bar{X} + k_1 s$$

These only apply using a normal distributions.

When to use
tolerance vs
confidence?



Work the Examples, too



Take another Sample Exam



Send over your questions



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Module 6

V. Reliability Testing