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accuracy and the Ca index; 2.2 Estimating and testing Ca based on a single sample; 2.2.1 The first two moments of Ca; 2.2.2 Confidence interval on Ca

2.3 Estimating and testing Ca based on multiple samples 2.4 Bayesian-like estimator of Ca; 3. The Cpk Index; 3.1 Process capability and the Cpk index; 3.2 Estimating and testing Cpk based on a single sample; 3.2.1 The r-th moment of Cpk; 3.2.2 Distributional properties of Cpk; 3.2.3 Confidence intervals for Cpk; 3.2.4 Hypothesis testing with Cpk; 3.3 Estimating and testing Cpk based on multiple samples; 3.4 The Bayesian approach to Cpk; 3.5 The Bayesian-like estimator of Cpk; 4. The Cpm Index; 4.1 Process capability and the Cpm index; 4.2 Estimating and testing Cpm based on a single sample

4.2.1 Estimation and distributional properties of estimators 4.2.2 Confidence intervals for Cpm; 4.2.3 Sample size determination for Cpm; 4.2.4 Hypothesis testing procedure (using Cpm); 4.3 Estimating and testing Cpm based on multiple samples; 4.4 The Bayesian approach to Cpm; 5. The Loss Indices; 5.1 Process loss and the Le index; 5.2 Estimation of Lpe, Lot, and Le; 5.2.1 Estimating the process relative inconsistency loss, Lpe; 5.2.2 Estimation of a process relative the off-target loss, Lot; 5.2.3 Estimation of process expected relative loss, Le

5.3 Upper confidence bounds of Lpe, Lot, and Le 5.3.1 An upper confidence bound on Lpe; 5.3.2 An upper confidence bound on Lot; 5.3.3 An upper confidence bound on Le; 5.4 Testing process capability based on the process loss; 6. The Cpmk Index; 6.1 Process capability and the Cpmk index; 6.2 Estimating and testing Cpmk based on a single sample; 6.2.1 Estimation and the distribution of the estimated Cpmk; 6.2.2 Confidence intervals on Cpmk; 6.2.3 Hypothesis testing with Cpmk; 6.3 Estimating and testing Cpmk based on multiple samples; 6.4 Bayesian-like estimation of Cpmk; 7. The Spk Index

7.1 Process capability and the Spk index

## Sommario/riassunto

This unique volume provides an up-to-date and detailed description of the various process capability indices widely (and sometimes misleadingly) used in the applications at production sites. The authors, who are internationally recognized experts in this area with numerous contributions to the field, provide a lucid exposition, which covers all the main aspects, developments and advances. The concept of Process Capability Index (PCI) is barely 20 years old, but the multitude of available versions can overwhelm even the most seasoned practitioner. The organized and self-contained presentation of