APPLICATION OF BOOTSTRAP METHOD IN CAPABILITY INDICES OF ASYMMETRIC TORLERANCES

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ABSTRACT

FOR THE LAST TWO DECADES, PROCESS CAPABILITY INDICES (PCIS) WHOSE PURPOSE IS TO ASSESS THE ABILITY OF A PROCESS TO PRODUCING ITEMS THAT SATISFY THE PROCESS SPECIFICATION LIMITS PRESENTED BY THE CUSTOMERS HAVE RECEIVED SUBSTANTIAL ATTENTION IN THE RELATED QUALITY LITERATURES. LOTS OF RESEARCHERS FOCUS THEIR STUDY ON THE PCIS WITH SYMMETRIC TOLERANCES, HOWEVER, THERE EXIST MANY PCIS WITH ASYMMETRIC TOLERANCE INSTANCES IN THE PRACTICAL MANUFACTURING ENVIRONMENTS. IN THIS RESEARCH, TWO ASYMMETRIC PCIS, AND , ARE SELECTED AND FOUR CONFIDENCE INTERVALS USUALLY USED IN BOOTSTRAPPING METHOD ARE APPLIED TO DEAL WITH ADDRESSED PCIS PROBLEMS. THE SIMULATION RESULTS IN VARIOUS MANUFACTURING CONDITIONS ARE INVESTIGATED AND SOME SUGGESTIONS ARE PROVIDED IN THE STUDY.

Keywords: PROCESS CAPABILITY INDICES, ASYMMETRIC TOLERANCE, BOOTSTRAPPING

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