Extension of the Mader's Model for Quantifying the Economic Effect of Measurement Errors and its Implementation

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Abstract

On NCSLI 2004 Conference, we* presented a methodology to implement the Mader's model for quantifying the economic impact of measurement errors and the results obtained from its application in some Colombian companies as well. We also included a computational tool to evaluate the probabilities and the associated costs. Mader´s model assumes that error mean is zero, i.e. that there are not systematic errors sources in the measurement system. Nevertheless, it is common to find companies which do not have calibration and maintenance programs for their measurement equipments, or whose programs are not well implemented. Therefore, these equipments could be found out of tolerance. In order to broad its scope, in this paper we propose a theoretical extension of the Madder's model which include systematic errors. Additionally, we present the corresponding methodology to implement this extended model. Results obtained in some Colombian companies are also shown.

*Luis Rodríguez, Alonso Arroyo, Oscar de J. Ramírez, Implementation Of A Methodology For Quantifying The Economic Effect Of MeasurementErrors.

**Mader, D. P.; Prins, J.; and Lampe, R. E. (1999) "The Economic Impactof Measurement Error," Quality Engineering 11(4), p.p. 563-574.