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Simulation and Modeling of Uncertainties in the Calibration

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Abstract: Sensitivity analysis and uncertainty estimation are ofmajor importance for the declaration of conformity of finishedproducts. Models must be sought to analyze the test data. Themain objective of this work is to establish reliable models toanalyze our experimental data and validate them. So we havestudied and used the Monte Carlo and Bootstrap simulationmethods, we have been able to realize programs that calculate theuncertainty according to the ISO 8466 standard on X-rayfluorescence spectrometer samples from the URASM CRTIchemical analysis laboratory. Programs and interfaces are madewith Matlab (GUI).

Keywords : simulation, Uncertainties, Monte Carlo, Bootstrap, calibration