ISO 5725-1:2023-07 (E)

Accuracy (trueness and precision) of measurement methods and results - Part 1: General principles and definitions

Contents

Page

Foreword iv

Introduction v

1 Scope 1

2 Normative references 1

3 Terms and definitions 1

4 General principles and practices of accuracy experiments 6
4.1 Accuracy experiment 6
4.2 Standard measurement method 7
4.3 Requirements concerning test items 7
4.4 Conditions for evaluation of repeatability (short intervals of time) 7
4.5 Conditions for evaluation of trueness 8
4.6 Participating laboratories 8
4.7 Influential factors (observation conditions) 8

5 Statistical model 9
5.1 Basic model 9
5.1.1 General mean, m 9
5.1.2 Laboratory component of bias: term B 10
5.1.3 Error term e 10
5.2 Relationship between the basic model and the precision 11
5.3 Bias of the measurement method 11
5.4 Alternative models 11

6 Experimental design of an accuracy experiment 12
6.1 Planning of an accuracy experiment 12
6.2 Standard measurement methods 12
6.3 Selection of laboratories for the accuracy experiment 12
6.4 Selection of test items to be used for an accuracy experiment 13

7 Utilization of accuracy data 14
7.1 Publication values of trueness and precision 14
7.2 Practical applications of trueness and precision values 15
7.2.1 General 15
7.2.2 Checking the acceptability of test results 15
7.2.3 Stability of test results within a laboratory 16
7.2.4 Assessing the performance of a laboratory 16
7.2.5 Comparing alternative measurement methods 16
7.2.6 Uncertainty evaluation 16

Annex A (informative) Symbols and abbreviations used in ISO 5725 (all parts) 17

Bibliography 19