

Workbooks and files for Calibration

Calibration_6.0.xlsm

The workbook for calibration with linear, 2nd degree and 3rd degree polynomial weighted and unweighted regression. Calculates concentrations for unknown samples with uncertainties and detection limits. Force intercept to zero is possible in manual runs.

Calibration_Dual_5.6.xlsm IS TERMINATED AND IS NO MORE AVAILABLE

Standard_Addition_1.0.xlsm

Standard Addition with constant or increasing volumes.

Deming_regression_1.0.xlsx

Regression with uncertainty in both X and Y (special case also known as orthogonal regression).

Calibration_manual_2024.pdf

Manual for the calibration workbook. You must consult this to understand all data, parameters and functions.

Intercepts_in_calibration_2023.pptx

Lecture about what affects the intercept, about leverage and about the workbooks.

Calibration lines 2021.pptx

Lecture about the mathematical background for the workbooks and calibration in general.

Funk et al 2007.pdf (Absalon files: see Lecture 04)

Textbook for quality assurance in analytical chemistry. Reference for determination of detection limits in the workbook. A very good and thorough textbook which I have used for many years at the in the teaching of analytical chemistry at the master and Ph.D. level at the Department in Chemistry. W. Funk, V. Dammann and G. Donnevert, Quality Assurance in Analytical Chemistry: Applications in Environmental, Food, and Materials Analysis, Biotechnology, and Medical Engineering, Second Edition. Wiley-VCH, Weinheim, 2007. See page 29-35 for detection limits. The detection limit DL is called the Decision limit XDL and the limit of detection LOD is called the Minimum Detectable Value XMDV in Funk et al..

Calibration_4.0_Worksheet_Video.mp4 (Absalon files: see Videos)

A (not so) short video showing most of the functions in the workbooks (26 min).

It is highly recommended to use the manual, the lecture and the video before the workbooks – but there are instructions in the sheets in the workbooks about what to do and in which order, so try it – have fun!