

ABSTRACT FORM ECAT SYMPOSIUM 15 – 16 SEPTEMBER 2022

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Title:

How to interpret the Z-score in survey reports (theory and practical examples)

Abstract:

In the ECAT's External Quality Assessment (EQA) program, each of the participating laboratories in a survey receives a standardized score (Z-score) that measures how many times the standard deviation the result deviates from the assigned value. When testing EQA control samples, laboratories typically test the two samples at the same time, exhibiting some correlation between EQA control results, a quantity that will transfer to the respective z-score results within an analytical run.

In this talk we will focus on different aspects of the Z-score evaluations. We will start by studying the univariate Z-scores, which provide information for the status of a specific sample. Next, we will focus on their bivariate analysis introducing the joint confidence region in bivariate Z-scores. The statistical framework will be presented in a non-technical way and the emphasis will be put in illustrative examples, where all possible scenarios will be presented, indicating the respective inference that can be drawn.