

Testing for Trend in Dose-Response Microarray Experiments: Comparison of Several Testing Procedures, Multiplicity, and Resampling-Based Inference: supplementary material

Lin *et al.* (2007)

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1 Directional Inference in Isotonic Regression Presented in Section 4.2

Figure 2 shows the values of test statistics which were calculated under H_1^{Up} and H_1^{Down} with data generated under H_1^{Up} for the simulation study in Section 4.2. The five test statistics are calculated for testing H_0 vs. H_1^{Down} (the x-axis of each test statistic in Figure 2). The behavior of Marcus', M , and the modified M statistics is similar as they all use the difference between the highest and the lowest isotonic mean. The maximum value of the test statistics (when calculated assuming the wrong direction) is equal to zero. In contrast, Williams' test statistic for testing H_0 vs. H_1^{Down} (shown on the x-axis of the panel *b*) can be positive or negative, because the sample mean of control group is used instead of the isotonic mean. Note that we reject the null hypothesis in favor of H_1^{Down} for negative values of the test statistic. Further, the value of the test statistics for testing H_0 vs. H_1^{Up} (the y-axis of Figure 2) is higher than the value of the test statistics calculated for testing H_0 vs. H_1^{Down} (the x-axis of Figure 2).

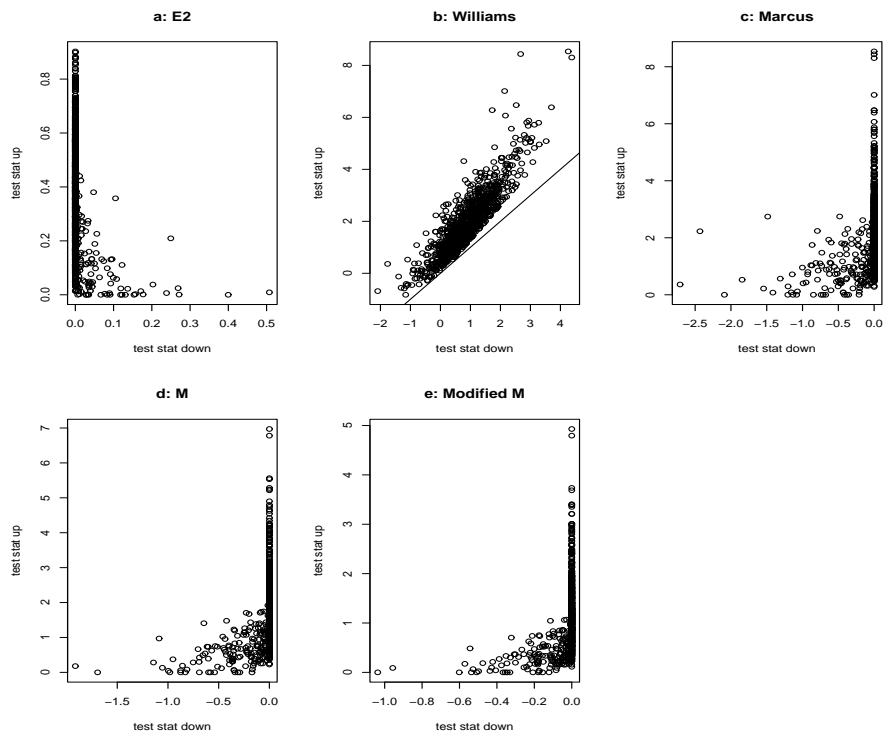


Figure 2: The five test statistics calculated for H_0 vs. H_1^{Up} (y-axis) and H_0 vs. H_1^{Down} (x-axis).