Title: Simultaneous Test Procedures
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Abstract: Comparing multiple treatments separately can lead to an unacceptably high chance of falsely rejecting at least one hypothesis, creating a large family-wise error rate (FWER). To account for this, we use the idea of coherent and consonant simultaneous test procedures (STP’s) and show how they lead to a strong control of the FWER. We then compare the resolution of various STP’s, that is, the probability of rejecting a minimal hypothesis given that the global hypothesis is rejected. Finally, we use the example of Tukey and Dunnett’s tests to show that reducing the number of minimal hypotheses can lead to a more resolvent STP.