Supplemental Figures:

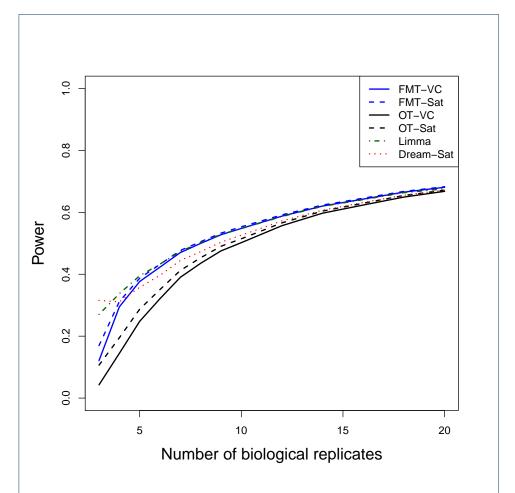


Figure 1 Power by numbers of biological replicates for correlated data. Power was averaged over 100 simulation runs for 13 different sample sizes of biological replicates where the number of technical replicates equals 2 and the expected mean number of false positives equals 5. Different methods were used for the degrees of freedom approximation: FMT-VC (solid blue) is the fully moderated t-test with the variance components method; FMT-Sat (dotted blue) is the fully moderated t-test with the Welch-Satterthwaite method; OT-VC (solid black) is the ordinary t-test with the variance components method; OT-Sat (dotted black) is the ordinary t-test with the Welch-Satterthwaite method; Limma (dotted dark green) is the Limma method with replicates' correlation estimation; Dream-Sat (dotted red) is the Dream method with the Welch-Satterthwaite method.

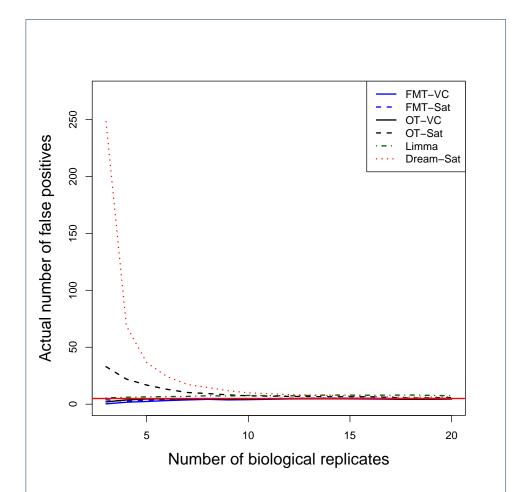


Figure 2 False positives by numbers of biological replicates for correlated data. Actural number of false positives was averaged over 100 simulation runs for 13 different sample sizes of biological replicates where the number of technical replicates equals 2 and the expected mean number of false positives equals 5. Different methods were used for the degrees of freedom approximation: FMT-VC (solid blue) is the fully moderated t-test with the variance components method; FMT-Sat (dotted blue) is the fully moderated t-test with the Welch-Satterthwaite method; OT-VC (solid black) is the ordinary t-test with the variance components method; OT-Sat (dotted black) is the ordinary t-test with the Welch-Satterthwaite method; Limma (dotted dark green) is the Limma method with replicates' correlation estimation; Dream-Sat (dotted red) is the Dream method with the Welch-Satterthwaite method.

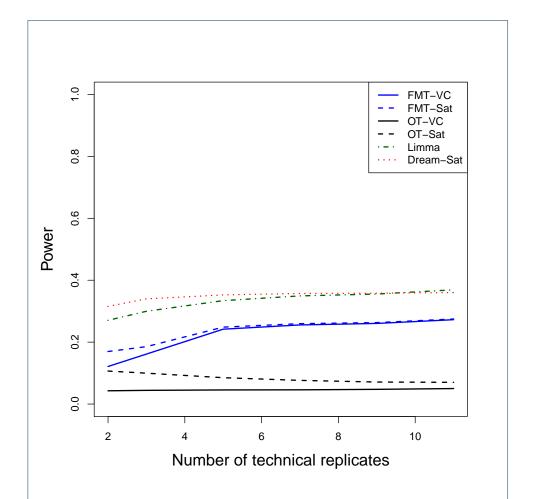


Figure 3 Power by numbers of technical replicates for correlated data. Power was averaged over 100 simulation runs for 6 different sample sizes of technical replicates where the number of biological replicates equals 3 and the expected mean number of false positives equals 5. Different methods were used for the degrees of freedom approximation: FMT-VC (solid blue) is the fully moderated t-test with the variance components method; FMT-Sat (dotted blue) is the fully moderated t-test with the Welch-Satterthwaite method; OT-VC (solid black) is the ordinary t-test with the variance components method; OT-Sat (dotted black) is the ordinary t-test with the Welch-Satterthwaite method; Limma (dotted dark green) is the Limma method with replicates' correlation estimation; Dream-Sat (dotted red) is the Dream method with the Welch-Satterthwaite method.

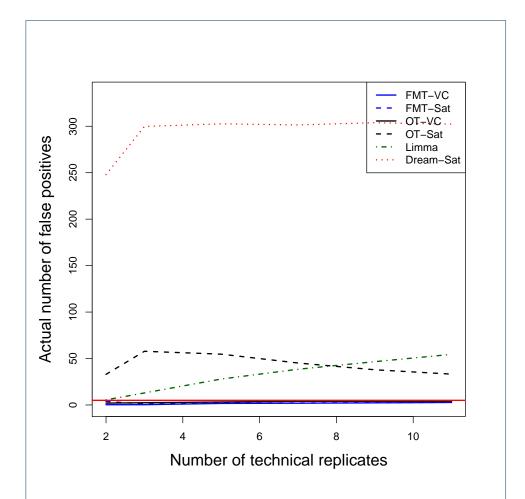


Figure 4 False positives by numbers of technical replicates for correlated data. Actural number of false positives was averaged over 100 simulation runs for 6 different sample sizes of technical replicates where the number of biological replicates equals 3 and the expected mean number of false positives equals 5. Different methods were used for the degrees of freedom approximation: FMT-VC (solid blue) is the fully moderated t-test with the variance components method; FMT-Sat (dotted blue) is the fully moderated t-test with the Welch-Satterthwaite method; OT-VC (solid black) is the ordinary t-test with the variance components method; OT-Sat (dotted black) is the ordinary t-test with the variance components method; OT-Sat (dotted black) is the ordinary t-test with the Welch-Satterthwaite method; Limma (dotted dark green) is the Limma method with replicates' correlation estimation; Dream-Sat (dotted red) is the Dream method with the Welch-Satterthwaite method.