1 Program 3dMannWhitney

1.1 Purpose

Program 3dMannWhitney was developed for nonparametric comparison of two treatments, or two samples. This program performs the Wilcoxon-Mann-Whitney rank-sum test on two groups of *AFNI* 3d datasets, voxel-by-voxel, to determine if the two samples are from the same population. Output includes an estimate for the treatment effect, as well as the normalized Wilcoxon rank-sum statistic, for each voxel.

The Wilcoxon-Mann-Whitney rank-sum test is the nonparametric counterpart of the (unpaired data) t-test. As such, program 3dMannWhitney roughly corresponds to program 3dttest, which may be used to compare two samples, assuming the underlying populations are normally distributed.

1.2 Further Details

For further details, see Section 1 of *Nonparametric Statistical Analysis of FMRI Data*, contained in file Nonparametric.ps.