

CHANGES TO MAINFRAME SAS

by Matthew Williams

SAS release 6.07 has recently been installed on COSMOS. At the same time, access to SAS has been restricted and if you wish to run SAS you will need to contact the help desk (on 367 0258) to get access. The restriction will enable operations to create a mailing list for SAS users, and also assist with their capacity planning.

A major improvement in release 6.07 is the addition of two procedures: MIXED and LATTICE. PROC MIXED fits generalised mixed linear models (i.e. those involving both fixed and random effects). The pre-existing generalised linear models procedure GLM fitted only fixed effects models (despite the RANDOM option!). MIXED therefore calculates the correct F-tests for mixed designs, in particular those involving blocking factors (see comparison below, and Research Methods note 13 in this issue).

Comparison of the Specification of a Split-Plot Design in PROC GLM and PROC MIXED

GLM

```
PROC GLM;  
  CLASS A B BLOCK;  
  MODEL X = A B A*B A*BLOCK;  
  TEST H = A E = A*BLOCK;
```

MIXED

```
PROC MIXED;  
  CLASS A B BLOCK;  
  MODEL X = A B A*B;  
  RANDOM BLOCK A*BLOCK;
```

The major bonus in MIXED is the ability to calculate (using the LSMEANS option) Best Linear Unbiased Predictors (BLUPs). These are the “adjusted” means of incomplete block designs.

The LATTICE procedure is similar to MIXED but deals with the specific cases of square and (some) rectangular lattice designs.

A number of update manuals have been produced by SAS detailing changes and enhancements in release 6.07. A catalogue and order form are available from me.