New pede version

available at
/afs/cern.ch/user/f/flucke/cms/pede/versBlobel9June2009patched

new features:

- new preconditioning for GMRES
  - not limiting the number of parameters to 46340
  - always applied, even if 'bandwidth' not chosen
  - one method with explicit bandwith, another without (and width 1)
    (recommendation: do NOT specify bandwidth option)
- fix problem in hash values for label pairs that was limiting to 46340 parameters
- line search with slope = 0, not minimum (-> better stability with outlier rejection)
- re-calculates the matrix in case of large number of rejects due to many outliers (might be slower, but more robust)
- new options
  - 'savespace': reduce memory needs of LOOP2 that was larger than needed for final matrix (also speeds up significantly)
  - 'presigma 0.1': assign presigma of 0.1 to all labels where no explicit presigma was set
  - 'regularisation 1. 0.04': regularisation with tau = 1, i.e. add tau * || x || to the minimised function where x is the vector of alignment parameters, weighted to their individual presigma (includes 'presigma 0.04'). This should reduce the influence of weak modes, but needs detailed studies.

missing features from old patches:

- remaining matrix solution methods are GMRES, sparseGMRES, diagonalisation and inversion, the others are gone
- no global correlations stated in inversion
- histograms of function values and of # of GMRES iterations are missing

(still) fishy:

- happens that of three labels belonging to the same object two seem to fail the 'entries' cut and get no result in millepede.res, but the third does not fail (present also in older versions, could be problem in input from CMS)
- Why warning like
  Fraction of rejects = 0.67 % (should be below 1 %)
  => please provide correct mille data
  WarningWarningWarningWarningWarningWarning
- "Exit code = 0: Convergence reached"
  Check whether true or just number of iterations reached.
- can I know whether matrix was re-evaluated?