



Recent MAD-X Issues

- Checking Routines of all ~25 MAD-X module examples proofed very useful for program integrity (J-L N)!
- In collaboration with Etienne fixed several PTC code flaws
- Apologies to module keepers for maybe too many warnings and errors → **clean-up action in progress**
- Needed to update physics constants like proton mass etc → **pseudo differences**
- PTC module fixes table headers etc
- Sequence save with long lines
- New routine get_beam_value (courtesy HG)
- Problems on MAC



More Serious Issues!

- PTC stand-alone LHC module comes along → report in a couple of weeks by J-L N
- MAD-X chromaticity wrong in presence of coupling (correct in PTC & SixTrack, fix in MAD-X if simple enough)
- BB needed for LHC upgrade studies in PTC → provided by Etienne in rudimentary form
- Errors, lattice and spoolpiece correctors can be written and read-in into thick lens LHC lattice using PTC → first results FR
- The drama of BEAM2 versus 4!!! (SF, TR, FS) The linear optics is okay but errors are inconsistent and the BV flag remains obscure or not clear to say the least! Here Thys's rules for b_n & a_n for BEAM2:
 - Quads ($n>1$) okay; $n=1$ → sign change
 - Dipoles ($b_v=1$) ($n>1$) → sign change; $n=1$ okay
 - Dipoles ($b_v=-1$) ($n>0$) okay
 - Comment I: we believe that the b_v treatment is faulty for $n=1$ in MAD-X
 - Comment II: This breaks in presence of nonzero closed orbit, misalignment, bumps etc → needed to make beam2 useful
 - Discussion needed to be settled to help in the CCC! → Rama