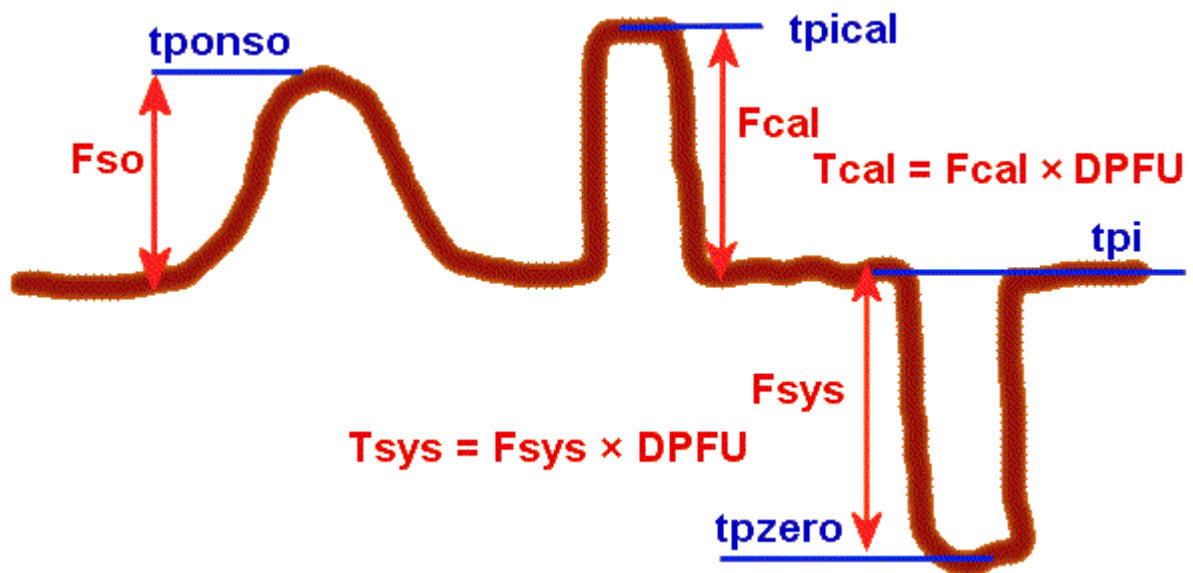# The role the DPFU plays

Extended abstract (of this report) for TOG Meeting, Yebes 2007

by Kaz Borkowski, Torun Station

Calibration idea

Source, cal signal and -20 dB levels
Original FS readings are marked in blue

Final user takes SEFD = Tsys / DPFU

or simply original Fsys

Thus, DPFU is just a scaling factor completely irrelevant to calibration quality

➢ **Any change of DPFU would not influence SEFD**
➢ **Changes of DPFU reflect in Tcal and Tsys only**
➢ **Attempts to fit DPFU are useless, hence they create confusion**

The question of Polynomial normalization

(not discussed in the full report)

Poly is used to correct source power **Fso** for the component of atmospheric opacity and antenna efficiency that depends on the elevation.
Poly is usually normalized to unity at its <u>maximum</u>, which means not well specified elevation.
Thus, in general, every station normalizes their equivalent flux density to different atmosphere.
It would be better to set it to 1 at zenith where all stations see similar atmospheric opacity.

Concluding points

❖ Disable GNPLT option to fit DPFU
❖ Update GNPLT to fit gain curve alone (normalized at zenith)
❖ For us, calibration friends, it would serve better if we adopted the **equivalent flux densities** for primary working quantities instead of the intermediate **noise temperatures**

Postscriptum (upon popular request):

An updated version of the good old
European VLBI Handbook
would be welcome by one and all.