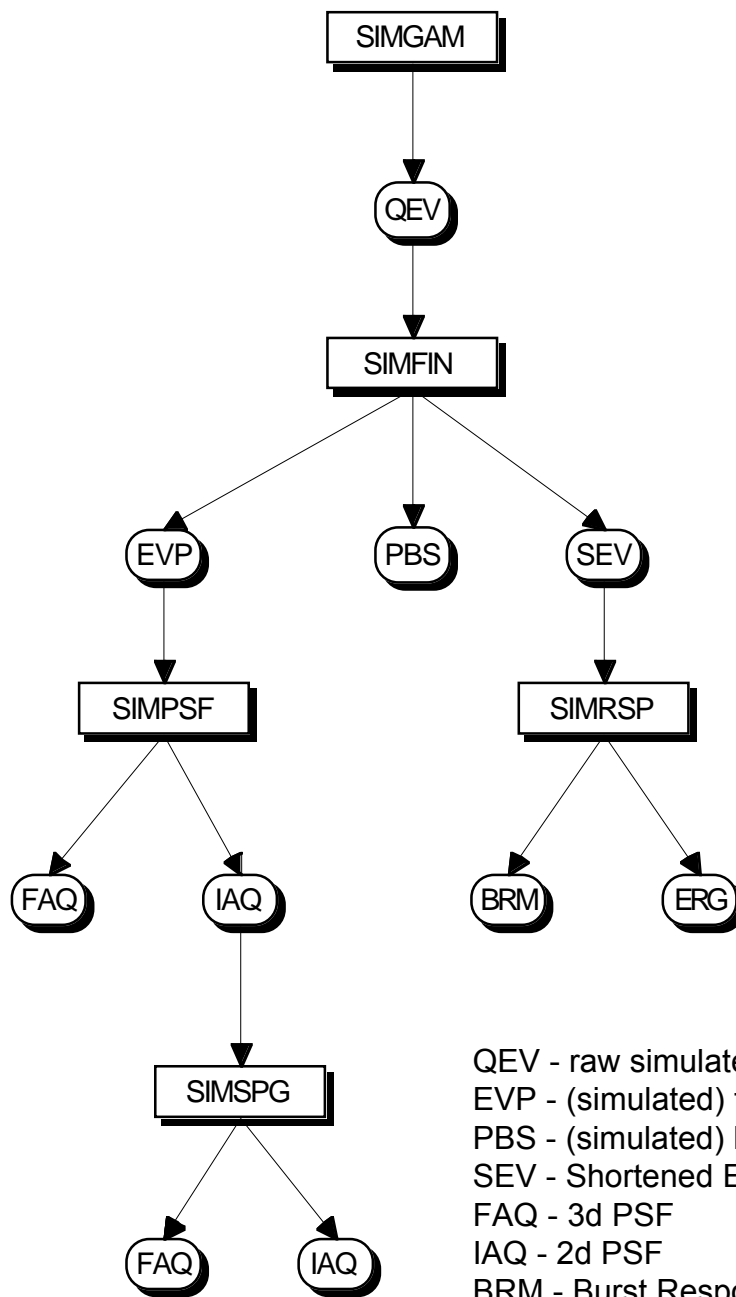


Final SIM Architecture

This represents the present software status.



QEV - raw simulated events
 EVP - (simulated) telescope events
 PBS - (simulated) burst data
 SEV - Shortened EVP data (with input energy)
 FAQ - 3d PSF
 IAQ - 2d PSF
 BRM - Burst Response Matrix
 ERG - Energy Response Matrix telescope data)

SIM Software Status

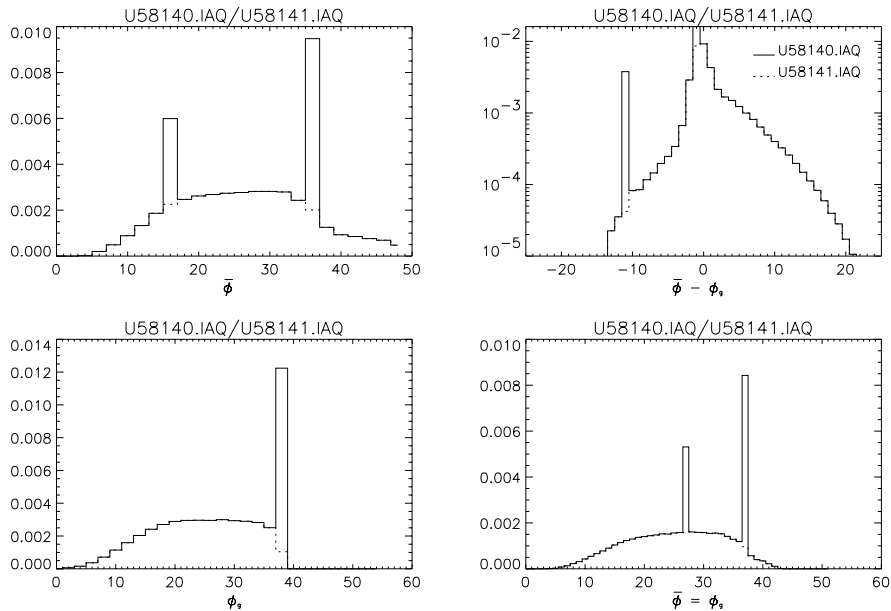
- **SIMGAM - unchanged, still at v22**
- **SIMENE - unchanged, still at v13**
- **SIMFIN - unchanged, still at v15**
- **SIMRSP - unchanged, still at v3**
- **SIMPSF**
 - **V12 (20-May-1998 @ UNH)**
 - » **Improved IAQ normalization**
- **SIMSPG - unchanged, still at v3**
- **SIMSRV - unchanged, still at v3**

SIMPSF v12

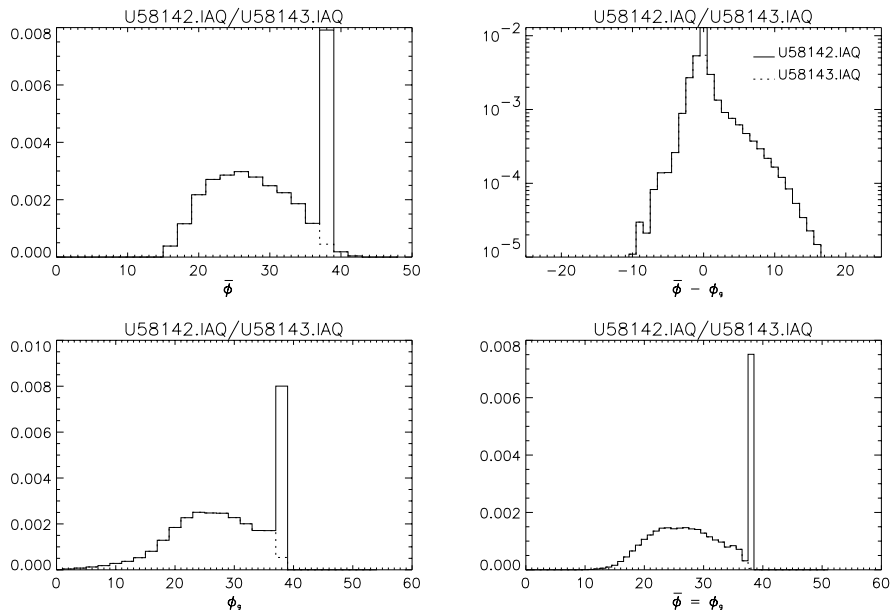
- Corrects problems when normalizing (dividing) by small geometry factors.
- Geometry factors smaller than $\sim 10^{-3}$ often led to spikes in the IAQ profile.
- Task parameter added that allows the user to specify the lower limit of the geometry factor that is used in the normalization. If below the specified limit, the geometry factor is set to zero.
- The default value (.001) seems to work quite well in most cases.

Impact of SIMPSF Changes

Based on E-2 PL at 0° zenith



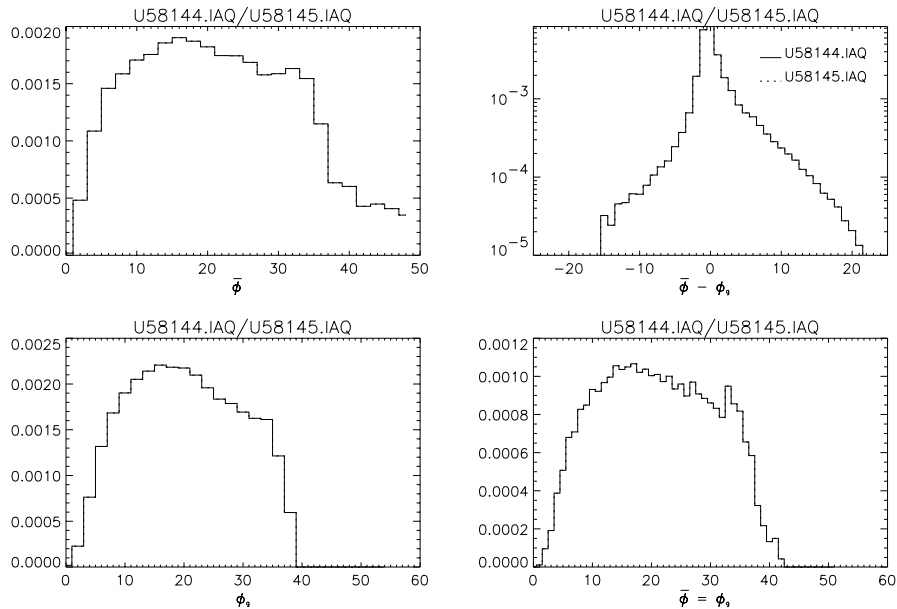
0.75 – 1.0 MeV



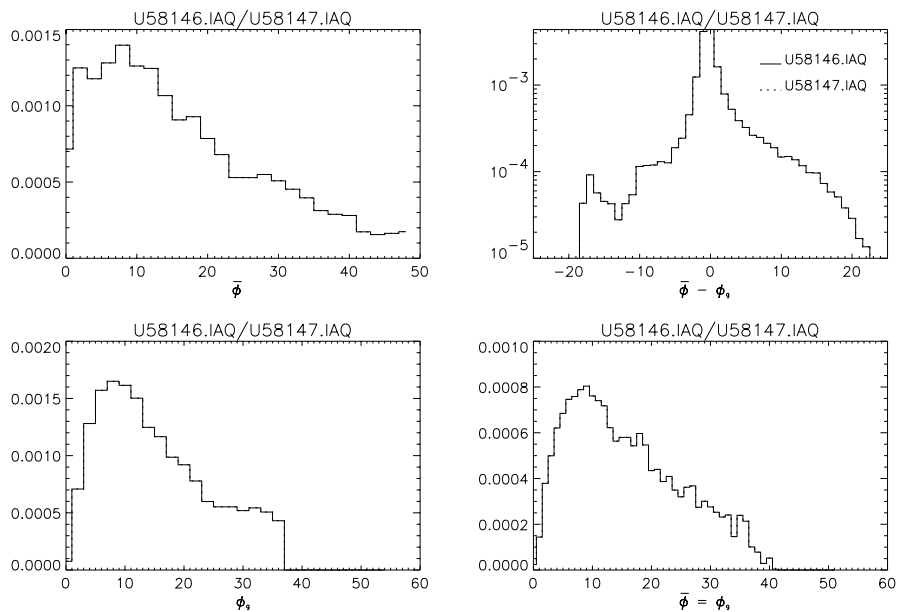
1.0 – 3.0 MeV

Impact of SIMPSF Changes

Based on E-2 PL at 0° zenith



3.0 - 10.0 MeV



10.0 - 30.0 MeV

Direct Simulations

- Goal has been to generate 3 million QEV events for an incident E^{-2} spectrum at various zenith angles (0° , 10° , 20° , 30° , 40° and perhaps 50° and 60°).
- To date, a complete set of E^{-2} QEV events have been generated for zenith angles of 0° , 10° , 20° and 30° .
- In addition, a set of E^{-3} QEV events have been generated for a 10° zenith angle.
- 'Standard' EVP data have been generated with SIMFIN:
 - Location smearing applied
 - No ToF broadening (present algorithm not updated)
 - No PSD broadening
 - Pre-flight calibration thresholds (UNH-ISS-1008)
- 'Standard' PSFs have been generated with SIMPSF (v12).
 - Standard Energy bands (0.75-1, 1-3, 3-10, 10-30)
 - D1E = .07 - 20 MeV
 - D2E = .65 - 30 MeV
 - PSD = 0 - 110
 - 2° phibar binning
 - 1° phigeo binning
- Complete report is being prepared.