TABLE 3

SEEING FOR DIFFERENT ATMOSPHERE SLABS AND VARIATION

Slab (km)	First Quartile (arcsec)	Median (arcsec)	Third Quartile (arcsec)
[2, 4] @ SPM2.1[a]	0.24[b] (−20.0%)	0.38[c] (−13.6%)	0.55[d] (−12.7%)
[2, 4] @ SPM1.5[a]	0.32[b] (−15.8%)	0.53[b] (−15.8%)	0.71[b] (−14.5%)
[4, 9]	0.11[b] (−8.3%)	0.16[b] (−5.9%)	0.24[b] (−11.1%)
[9, 16]	0.11[b] (−8.3%)	0.22[b] (−8.3%)	0.39[b] (−9.3%)
[16, 21]	0.04[b] (−20.0%)	0.07[b] (−12.5%)	0.12[b] (−14.3%)
[21, 25]	0.01[b] (0.0%)	0.02[b] (0.0%)	0.03[b] (−25.0%)
Free atmosphere: [4, 25]	0.24[b] (−7.7%)	0.35[b] (−10.2%)	0.55[b] (−6.8%)
Whole atmosphere.: [2, 25][e]	0.50[b] (−3.8%)	0.68[b] (-4.2%)	0.97[c] (−2.0%)

[a]Without dome seeing.

[b]Uncertainty: ±0.01.

[c]Uncertainty: ±0.02.

[d]Uncertainty: ±0.03.

[e]As if measured at the SPM2.1 and without dome seeing.

is on top of a 20 m high building whereas the former is at ground level. The general vertical structure of the turbulence distribution from the whole data set can be summarized as a strong layer at the ground, and two thick layers centered at 6 and 13 km. The mean relative difference of the corrected and uncorrected median C_N^2 values is 15.2%, 19.3% and 15.4% for the data obtained at SPM1.5, SPM2.1 and for the complete data set.

The cumulative distribution of the corrected and uncorrected measurements of seeing generated within different altitude slabs is shown in Figure 3. For the 2–4 km slab, which includes ground turbulence, the data obtained at SPM2.1 and SPM1.5 are separated into two different cumulative distributions as ground contributions are different for each telescope. Similar plots are exhibited in Figure 4 for the free (above 4 km) and the whole atmosphere. Differences between the corrected and uncorrected cumulative distributions seem to be basically driven by seeing values. The larger the seeing value, the larger the difference. This is an expected behavior, since corrected and uncorrected C_N^2 are proportional to each other. The corrected values of median, first and third quartile of the seeing generated in the different slabs are summarized in Table 3. The variation of the corrected relative to the uncorrected values (reported in Table 3 of A04) is given in parentheses. Note that the vertical distribution of those relative variations does not follow any of the individual altitude profiles of the relative error $\epsilon(h)$, shown in Figure 1. This is due to the fact that the statistical values reported in Table 3 were obtained from a combination of different functions $\epsilon(h)$.

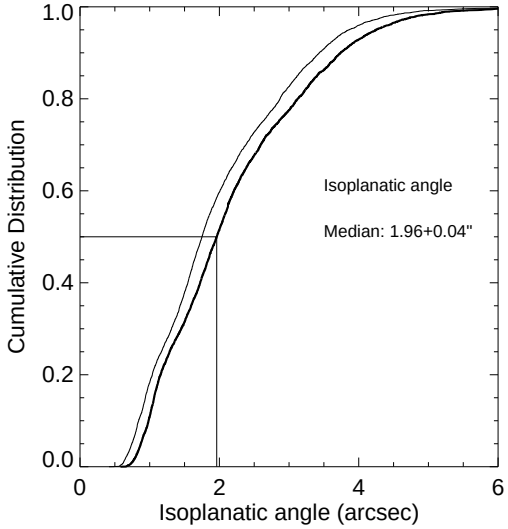

Fig. 5. Cumulative distribution of the isoplanatic angle θ_0 computed from each turbulence profile of both campaigns and both telescopes. Bold and thin lines correspond to the corrected and non-corrected values respectively. The corrected median value of θ_0 is $1\farcs96 \pm 0\farcs04$ and the 1st and 3rd quartiles are $1\farcs31 \pm 0\farcs04$ and $2\farcs86 \pm 0\farcs04$.

The isoplanatic angle θ_0 depends on C_N^2 and on its vertical distribution (see e.g. equations 5 and 6