The simulations was done using 1 TeV tagging jets ($qq \to (WW, ZZ \to H)jj$) which were generated by PYTHIA. The particles were collected in cone with radius of 0.7 in $\eta - \phi$ with the center at $\eta = 4.5$. When we reconstructed the response of the calorimeter using the GEANT, the signal from the towers within the cone with radius of 0.5 in $\eta - \phi$.

The first set of measurements was proceeded with noninstrumented gaps of 0 mm. The dependency of amplitude versus the angular position in sector is represented in Fig 1. The energy resolution as a function of ϕ is represented in Fig 2. In Fig 3 you can see a fraction of events with energy smaller than 50% of average reconstructed energy amplitude.

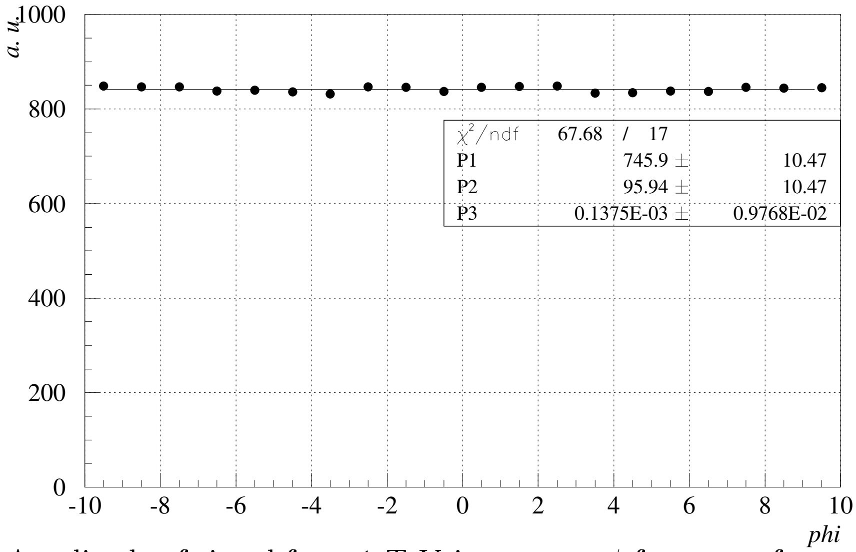

Figure 1: Amplitude of signal from 1 TeV jets versus ϕ for sector for gap width 0 mm

The second set of measurements was done for noninstrumented gap of 7.5 mm. The same dependences as were shown above are represented in Figs 1, 2 and 3

The following figures (7, 8, 9) shows the reconstructed energy density distribution in sectors for cases when center of the jet is at the center of sector and when the jet is on the border between sectors.

The second set of measurements was done for noninstrumented gap of 15 mm. The dependences are represented in Figs 1, 2 and 3

In addition to the gap measurements the affect of fiber quality was simulated. In figure 13 you can see how the resolution depends on quality of polishing.

In figure 14 the dependence of resolution versus the longitudinal accuracy of insertion of the fibers in to the holes is shown.

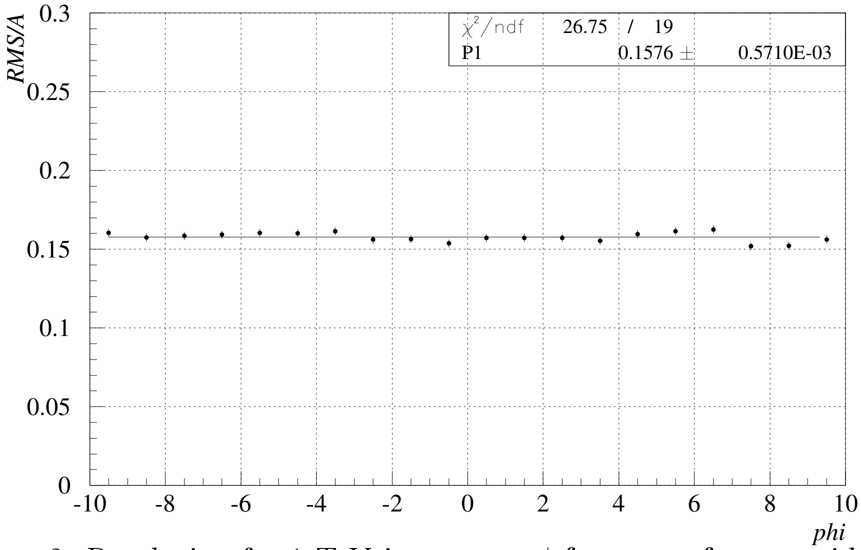

Figure 2: Resolution for 1 TeV jets versus ϕ for sector for gap width 0 mm

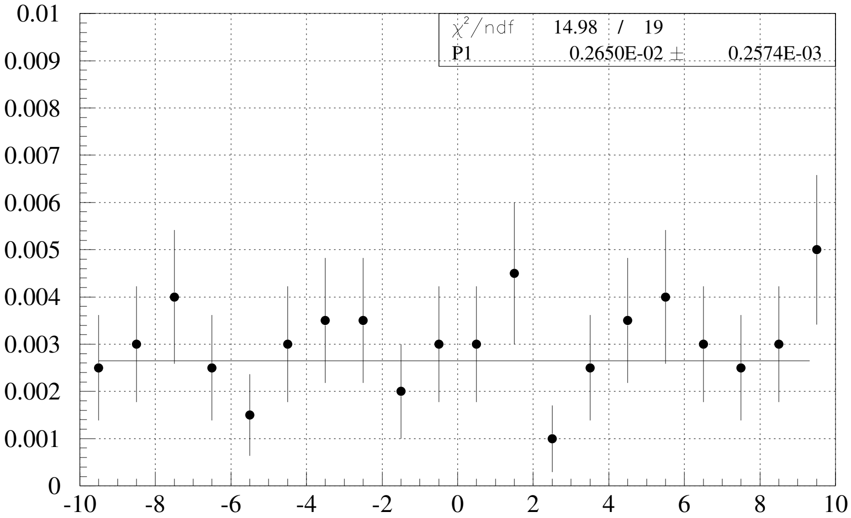

Figure 3: The fraction of events with signal amplitude below 50% of average amplitude versus ϕ for sector for gap width 0 mm

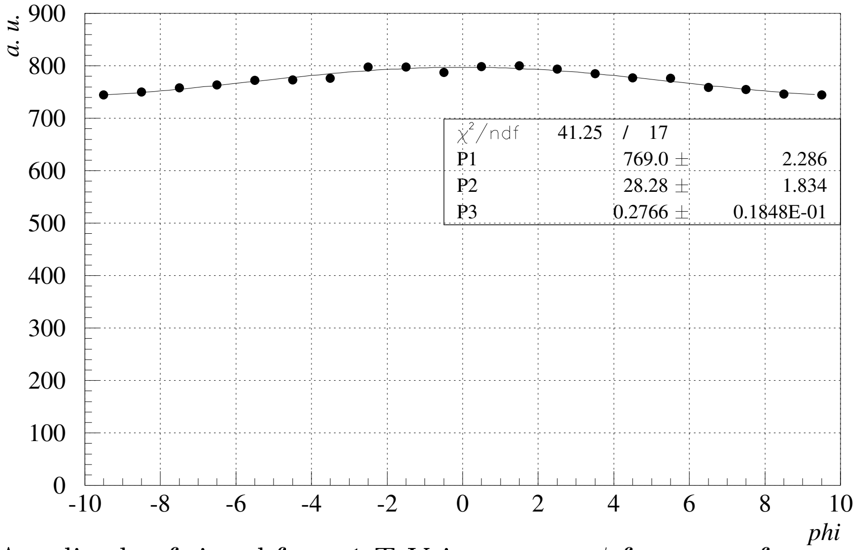

Figure 4: Amplitude of signal from 1 TeV jets versus ϕ for sector for gap width 7.5 mm

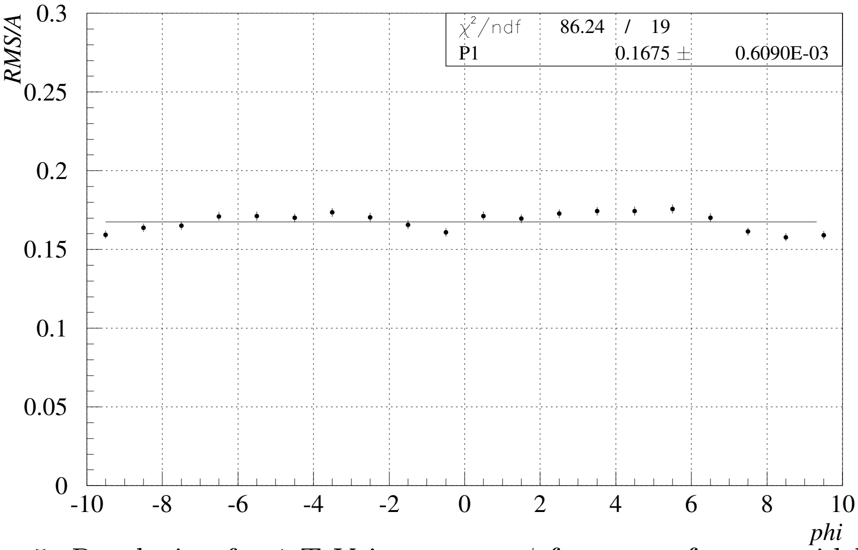

Figure 5: Resolution for 1 TeV jets versus ϕ for sector for gap width 7.5 mm

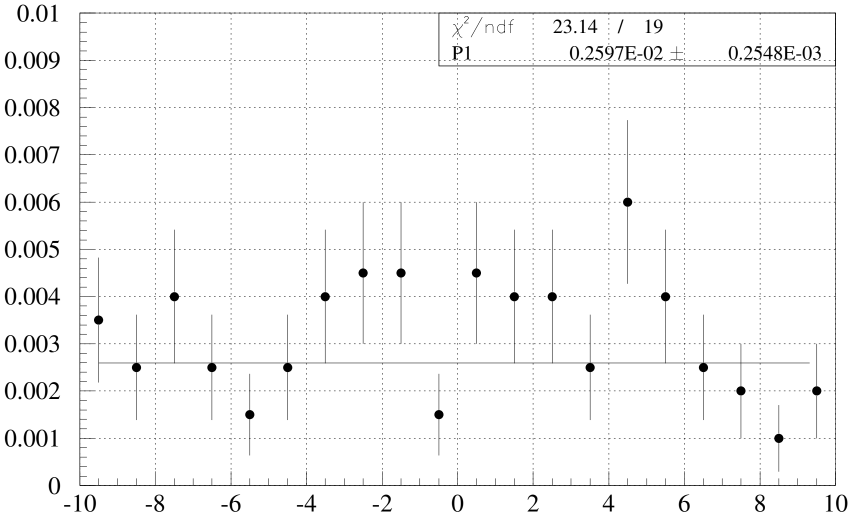

Figure 6: The fraction of events with signal amplitude below 50% of average amplitude versus ϕ for sector for gap width 7.5 mm

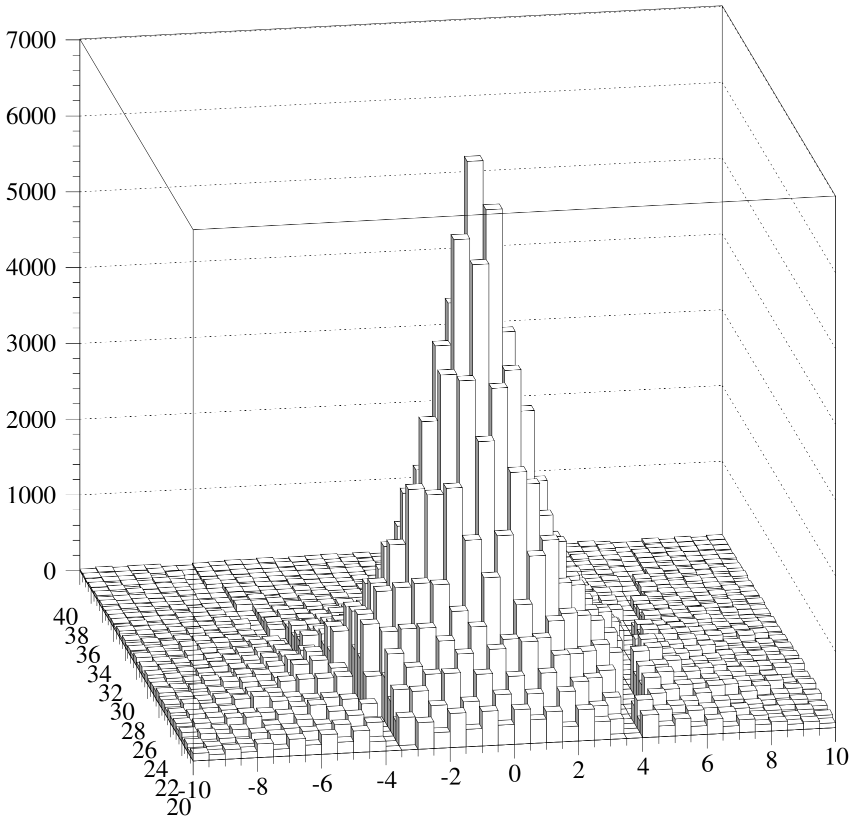

Figure 7: Energy density distribution in sector for $\phi = 0°$

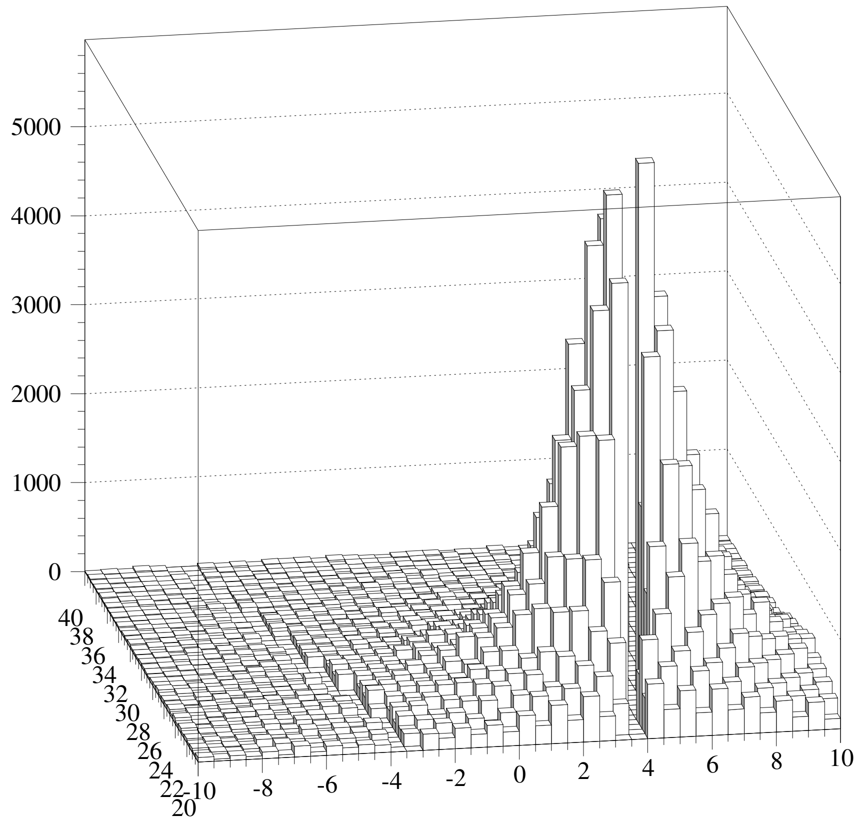

Figure 8: Energy density distribution in sector for $\phi = 10^{\circ}$

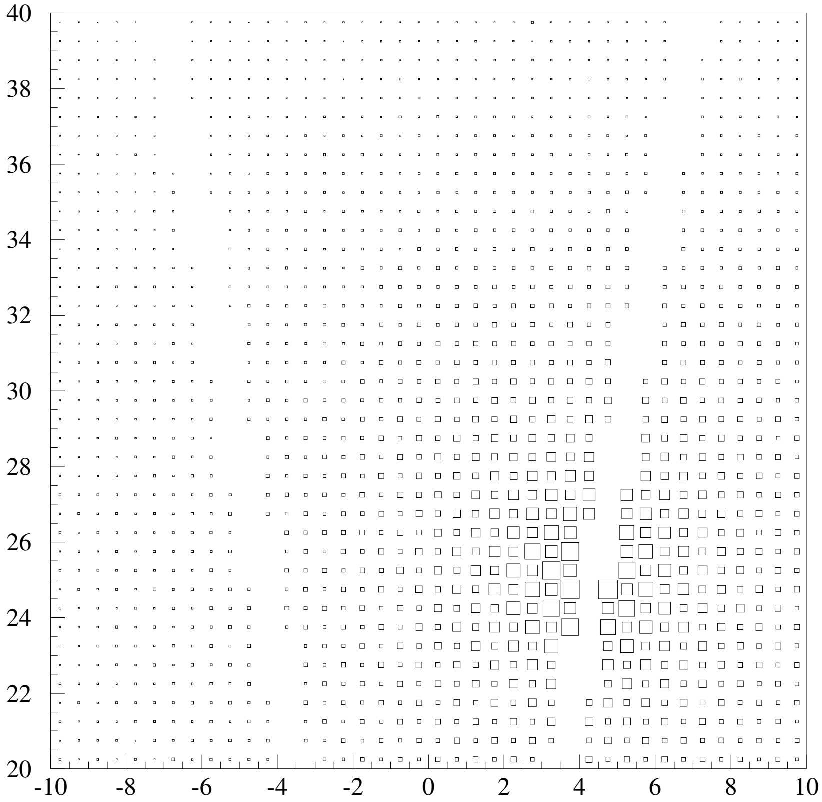

Figure 9: Energy density distribution in sector for $\phi = 10°$

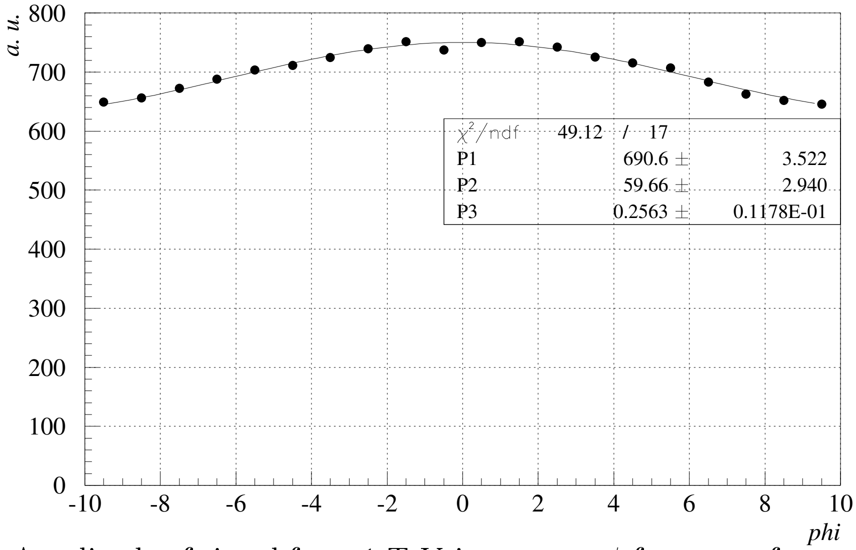

Figure 10: Amplitude of signal from 1 TeV jets versus ϕ for sector for gap width 15 mm

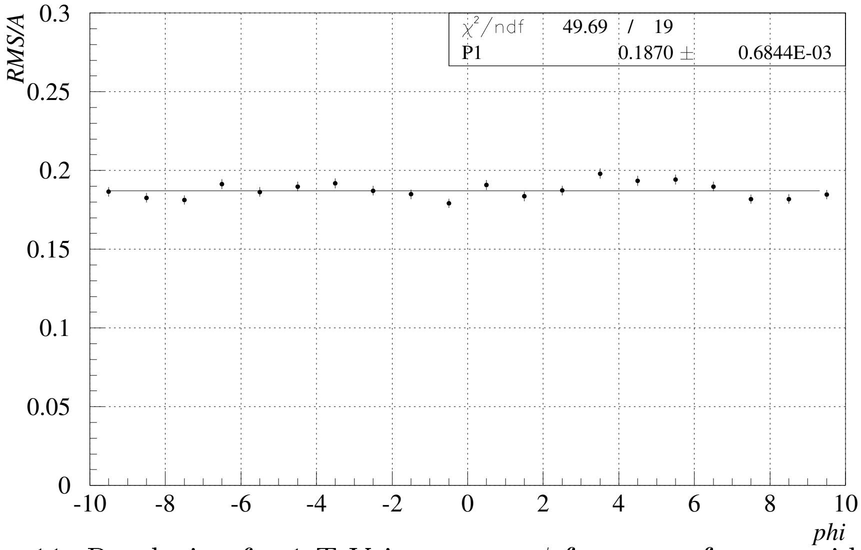

Figure 11: Resolution for 1 TeV jets versus ϕ for sector for gap width 15 mm

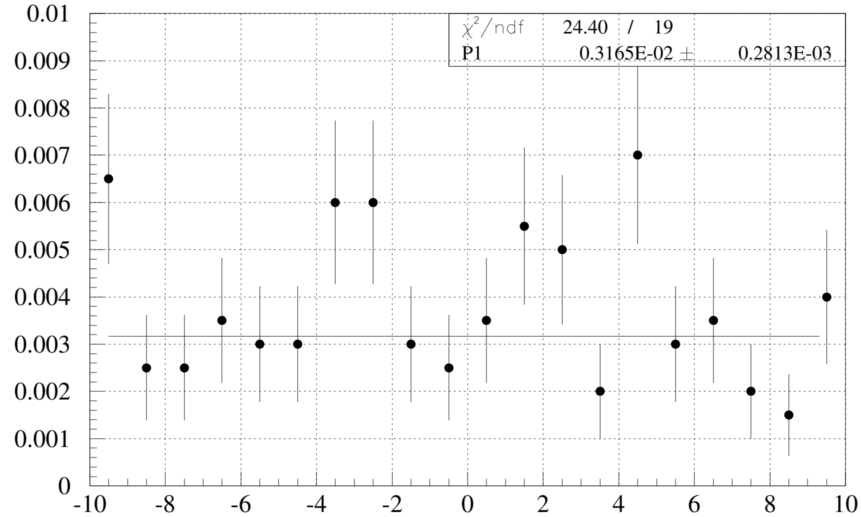

Figure 12: The fraction of events with signal amplitude below 50% of average amplitude versus ϕ for sector for gap width 15 mm

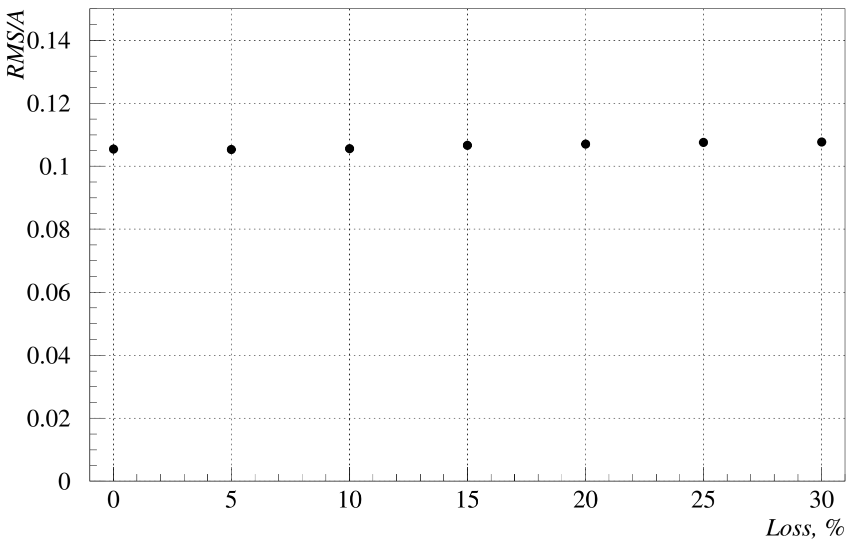

Figure 13: The energy resolution for 1 TeV jets as a function of fiber quality (fraction of light which is lost due to bundle polishing quality)

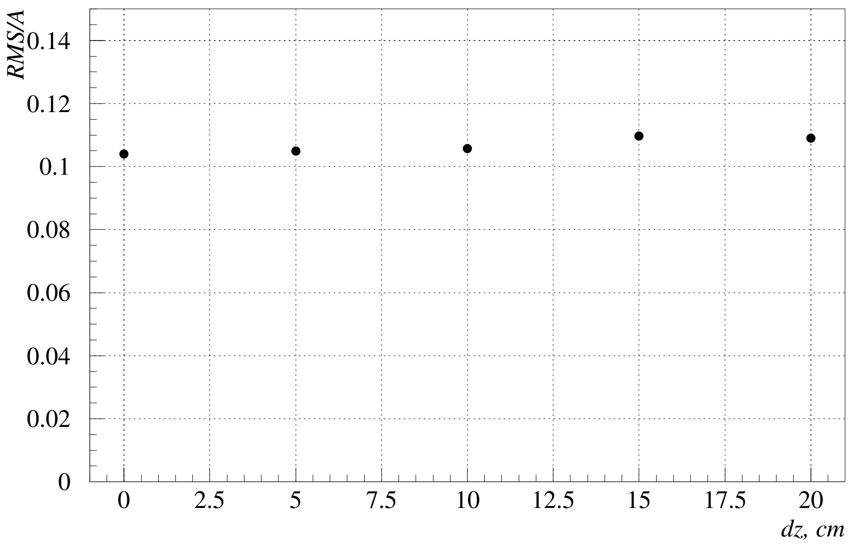

Figure 14: The energy resolution for 1 TeV jets as a function of fiber quality (accuracy of insertion into the holes)