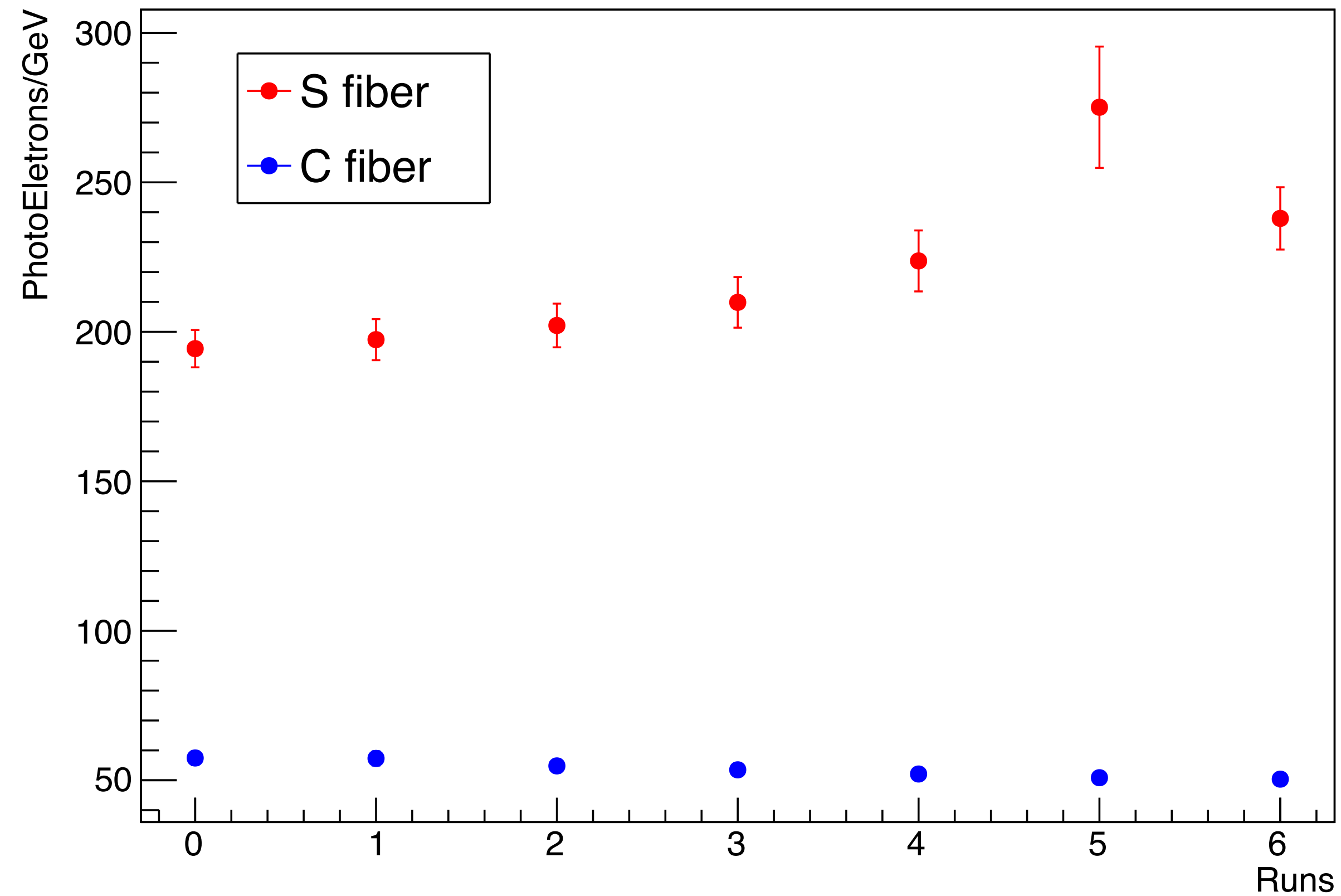




# Calibration

## 40 GeV electron

Calibration constants vs run [40 GeV]

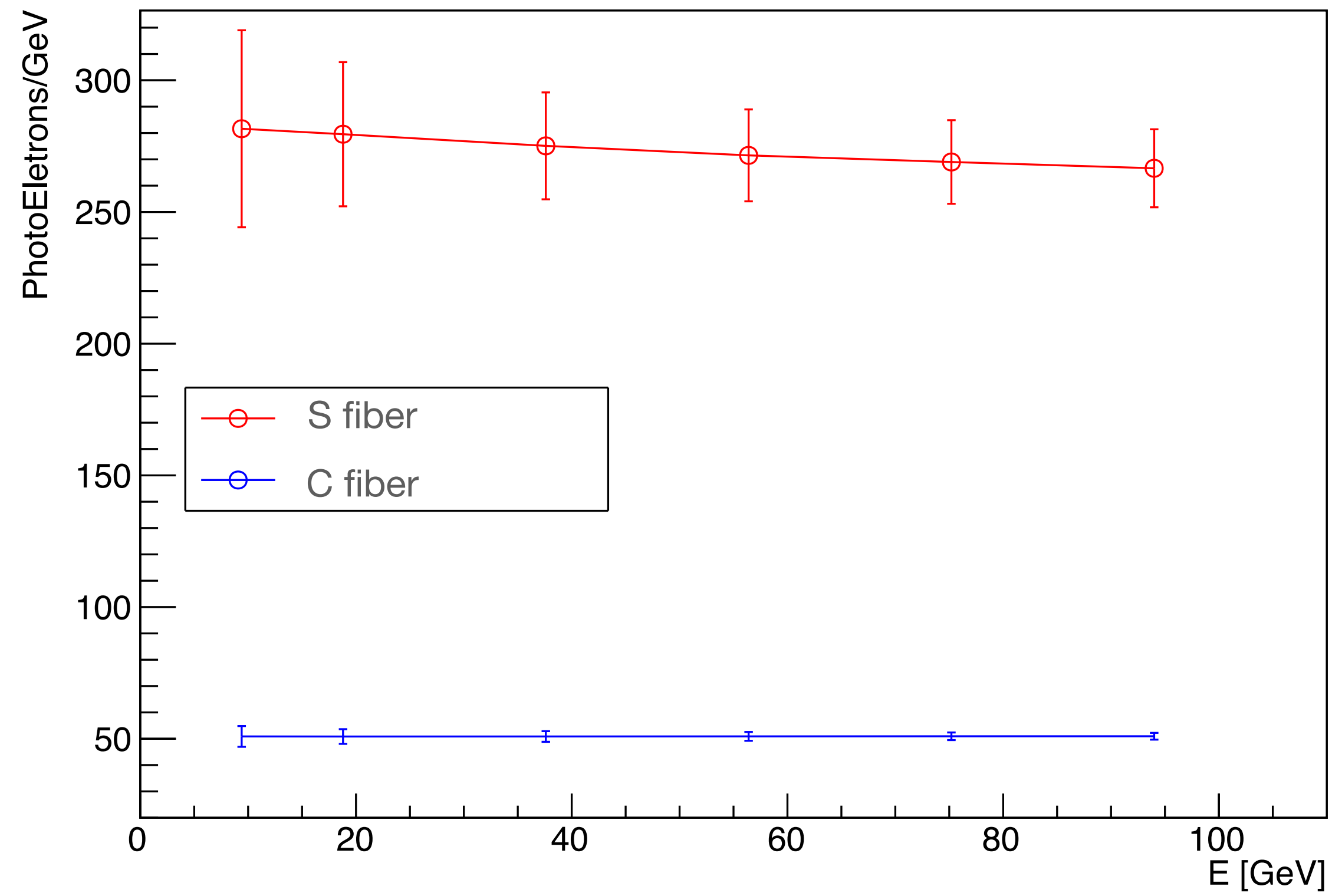


We consider as calibration constant the one for run 3 at 40 GeV

- $k_S = 209.861$
- $K_C = 53.4979$

# Calibration

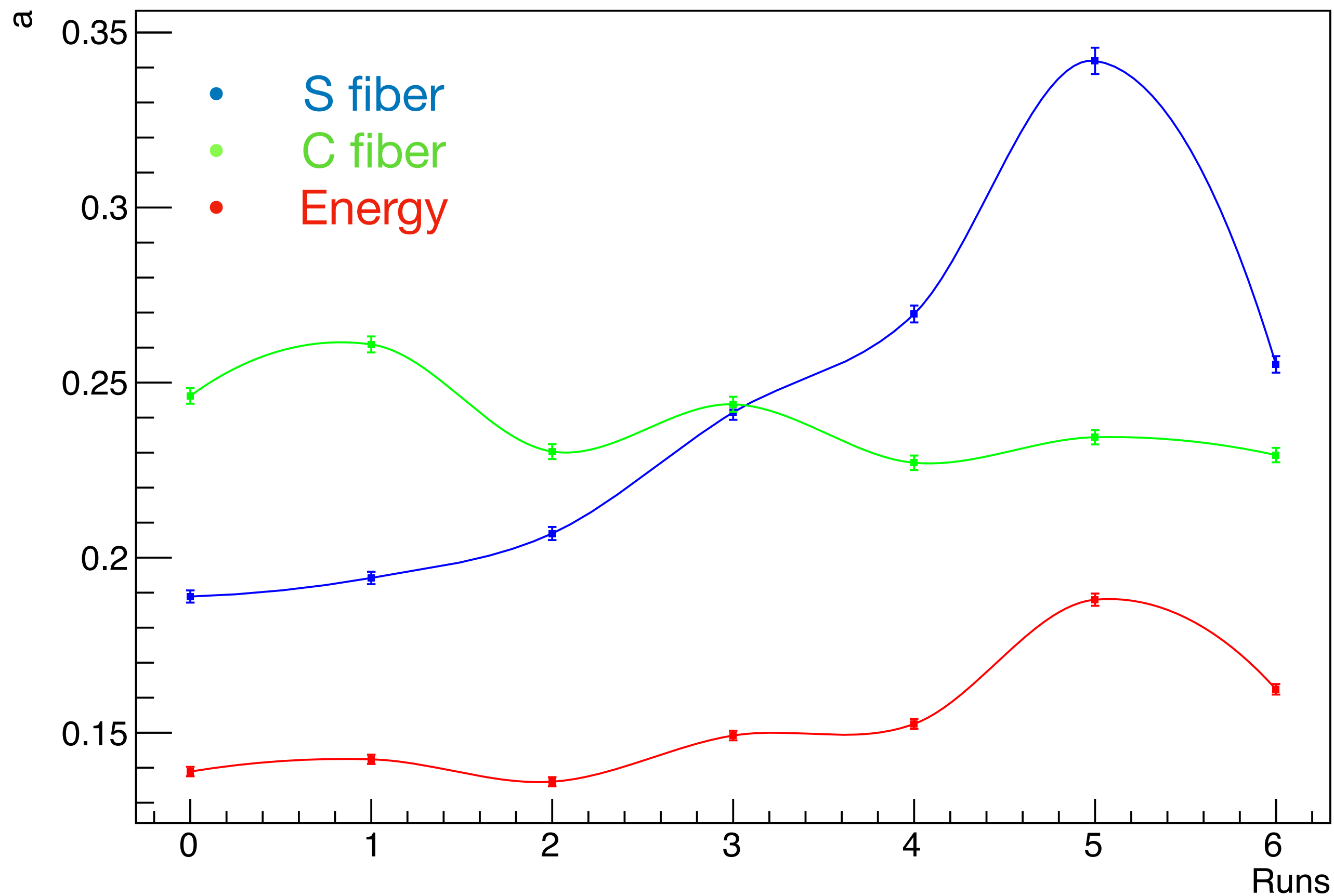
## Calibration constants vs E



Calibration constants (for S fibers) are pretty flat except for run 5, which varies between 266.601 and 281.607

# Resolution - poissonian contribution

a vs Runs



## A possible explanation

S fibers have a much higher light yield than C fibers. Therefore the former are more sensitive to the position of the electron entry point.

## A brief memorandum

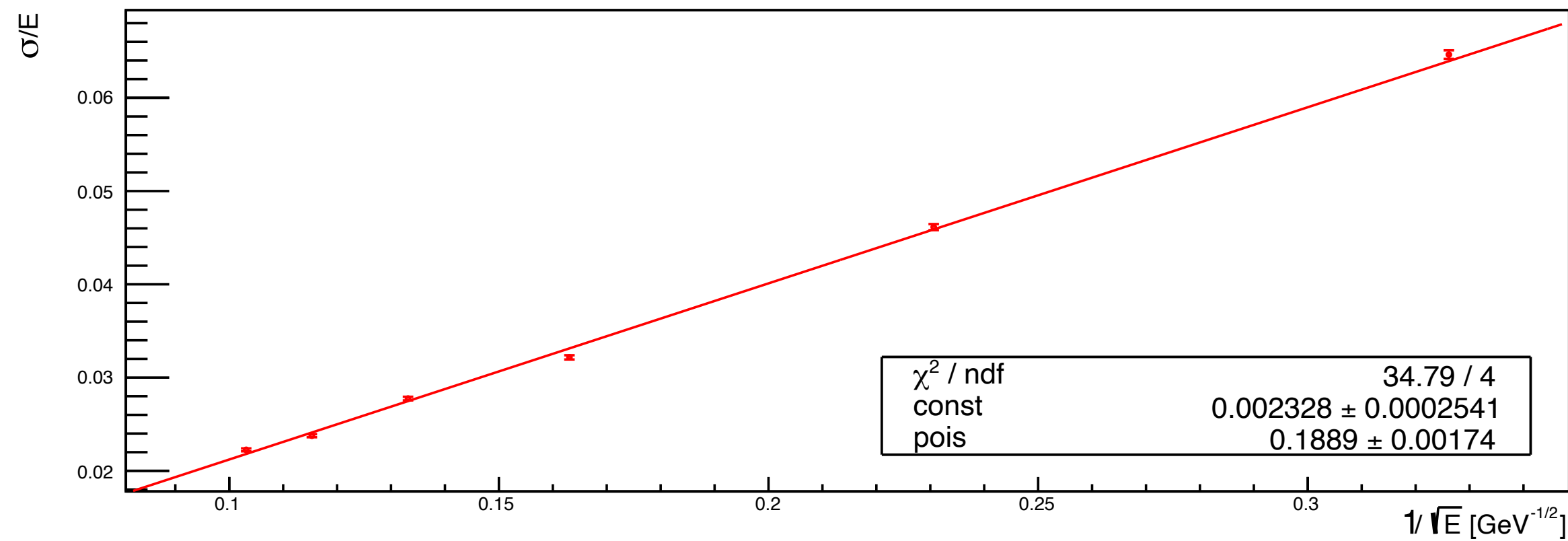
$$E = \frac{\frac{E_S}{\sigma_S^2} + \frac{E_C}{\sigma_C^2}}{\frac{1}{\sigma_S^2} + \frac{1}{\sigma_C^2}}$$

This equation gives reconstructed energy from scintillation and cherenkov signals

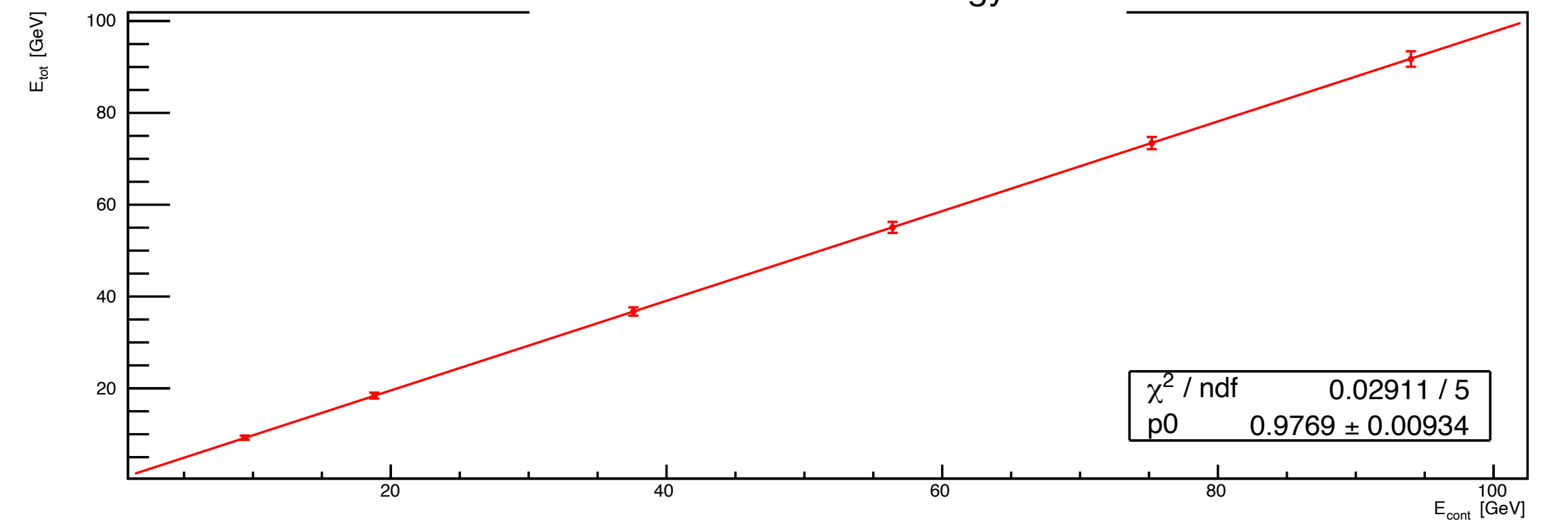
# Resolution - Run0

## Electrons in a energy range of 10 to 100 GeV

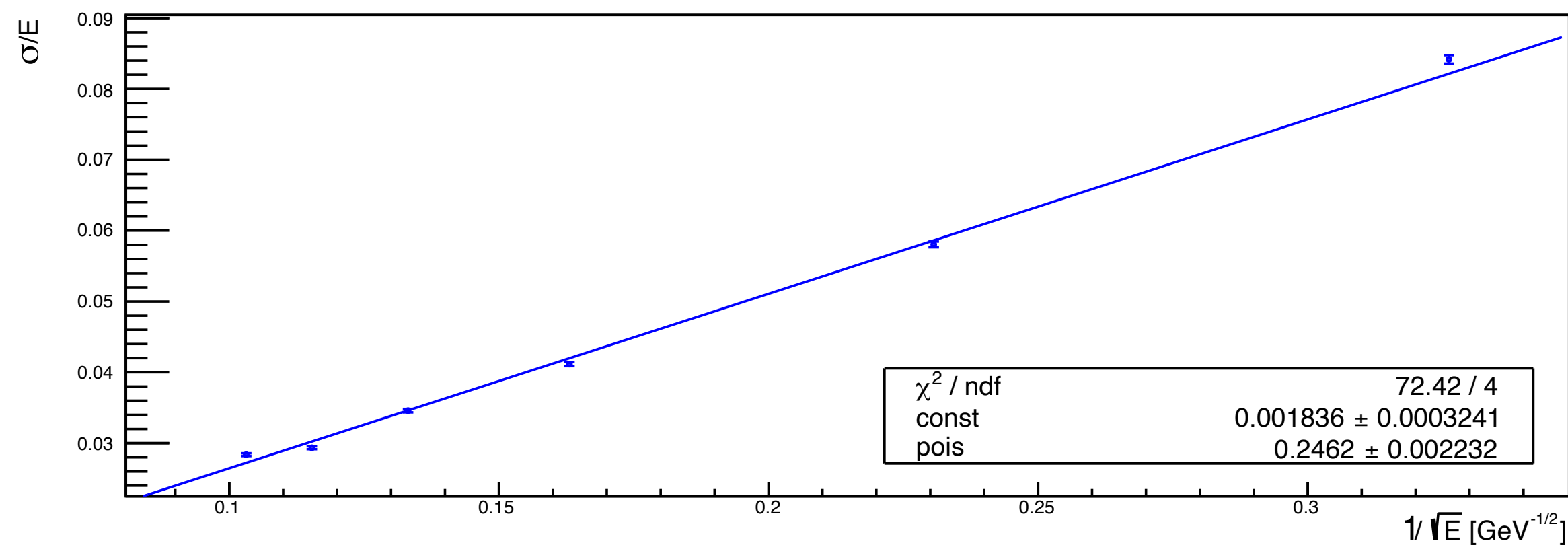
Resolution - S fiber



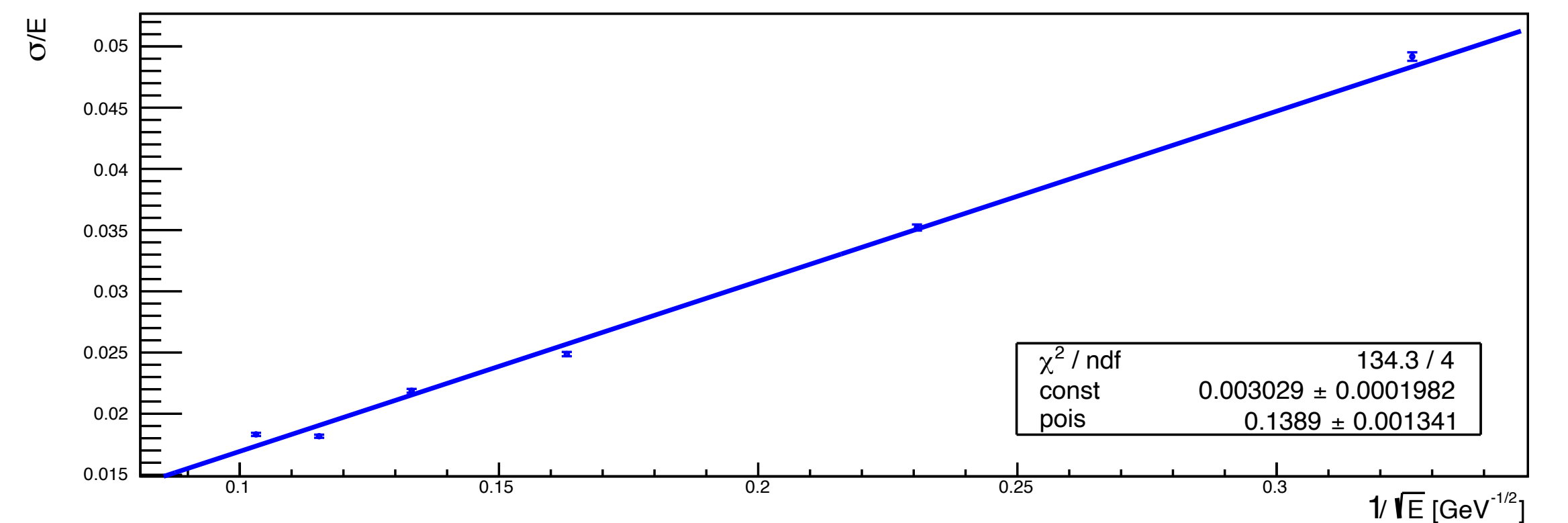
E vs contained energy



Resolution - C fiber



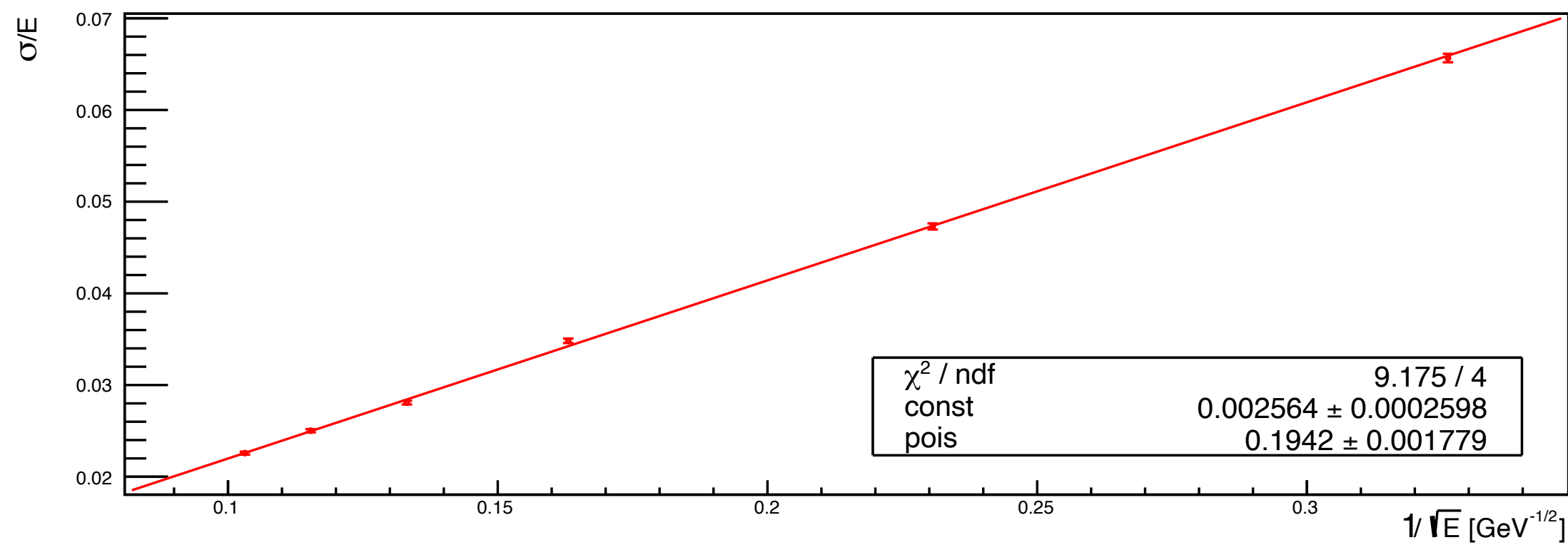
Resolution - E



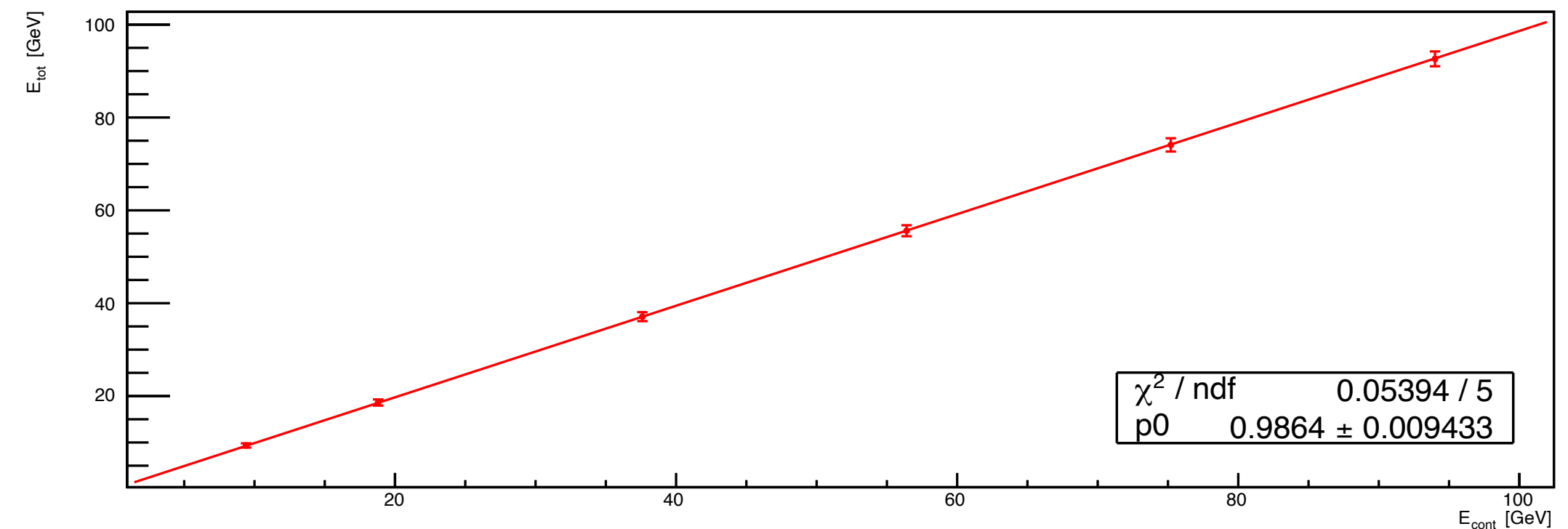
# Resolution - Run1

## Electrons in a energy range of 10 to 100 GeV

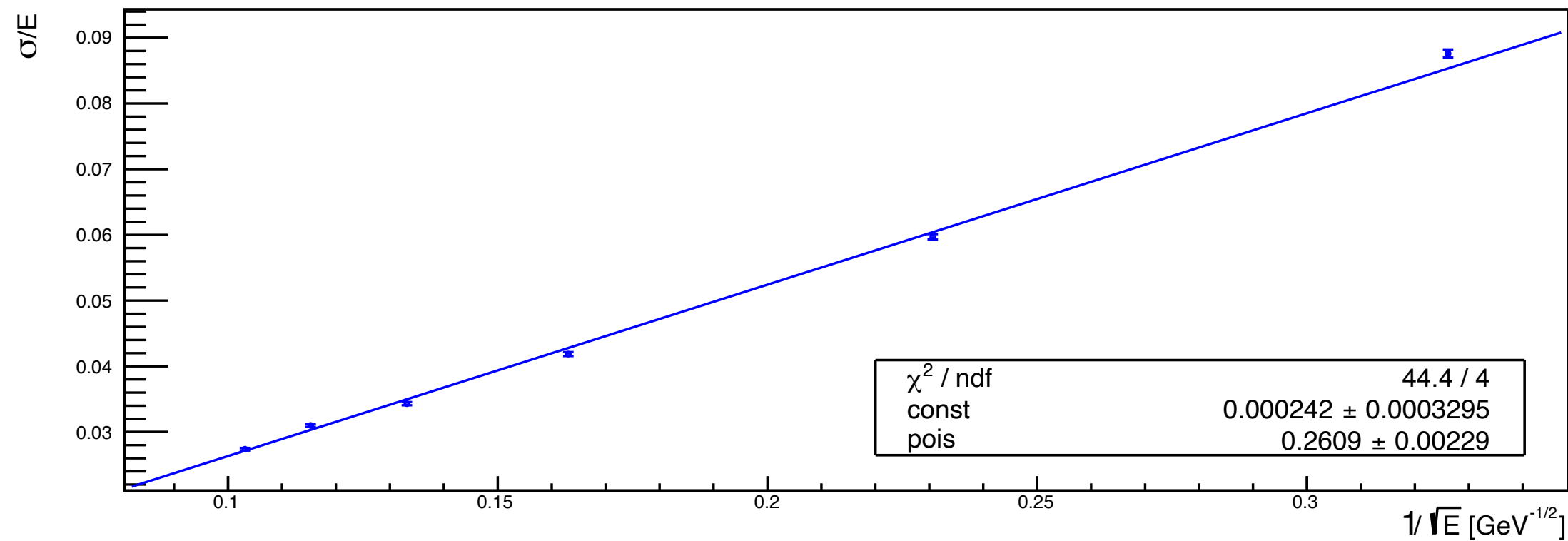
Resolution - S fiber



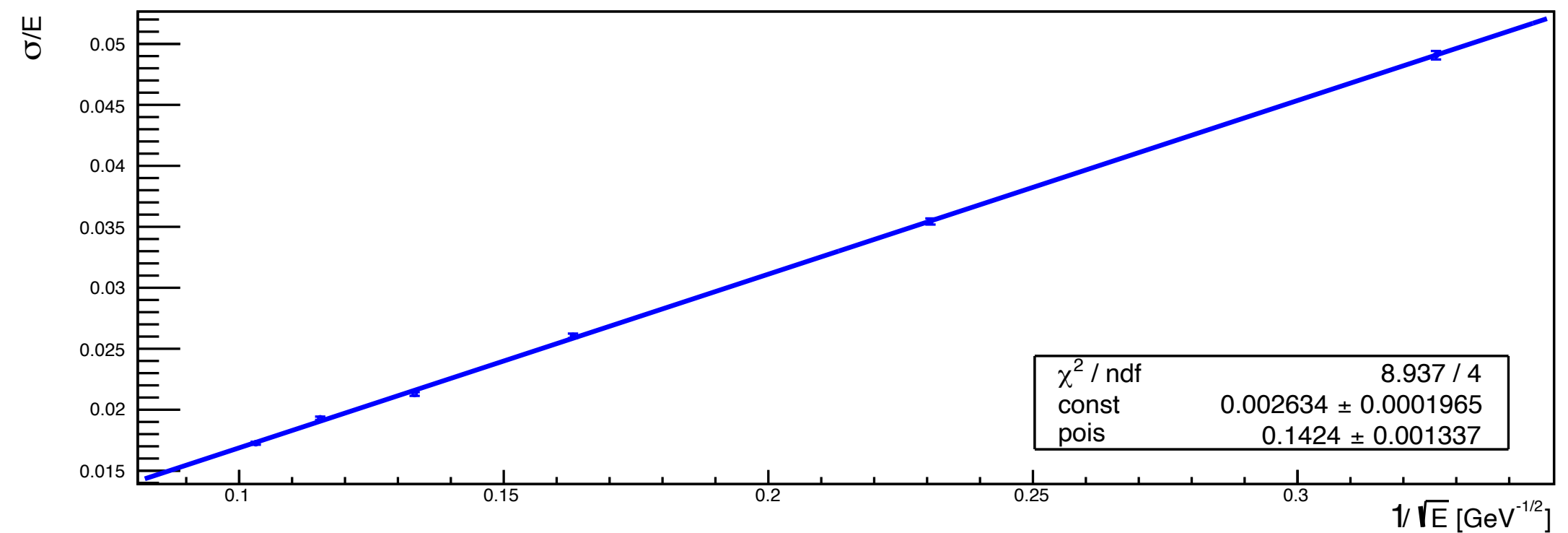
E vs contained energy



Resolution - C fiber

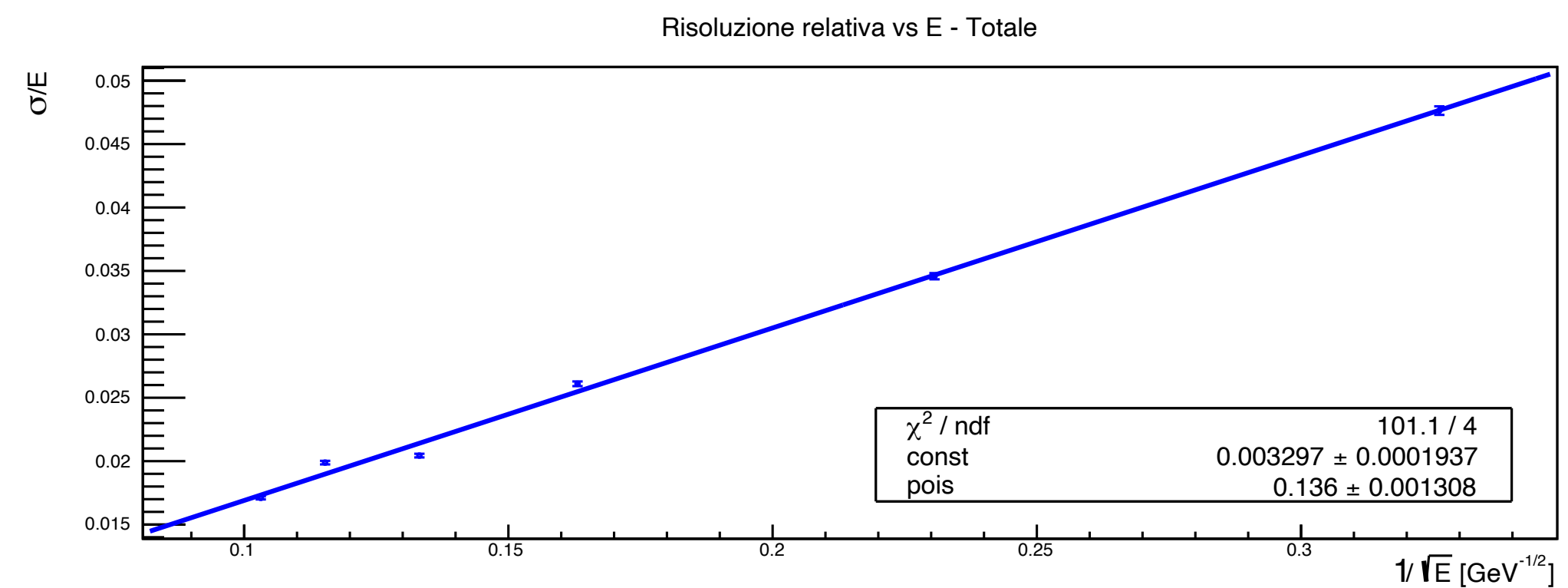
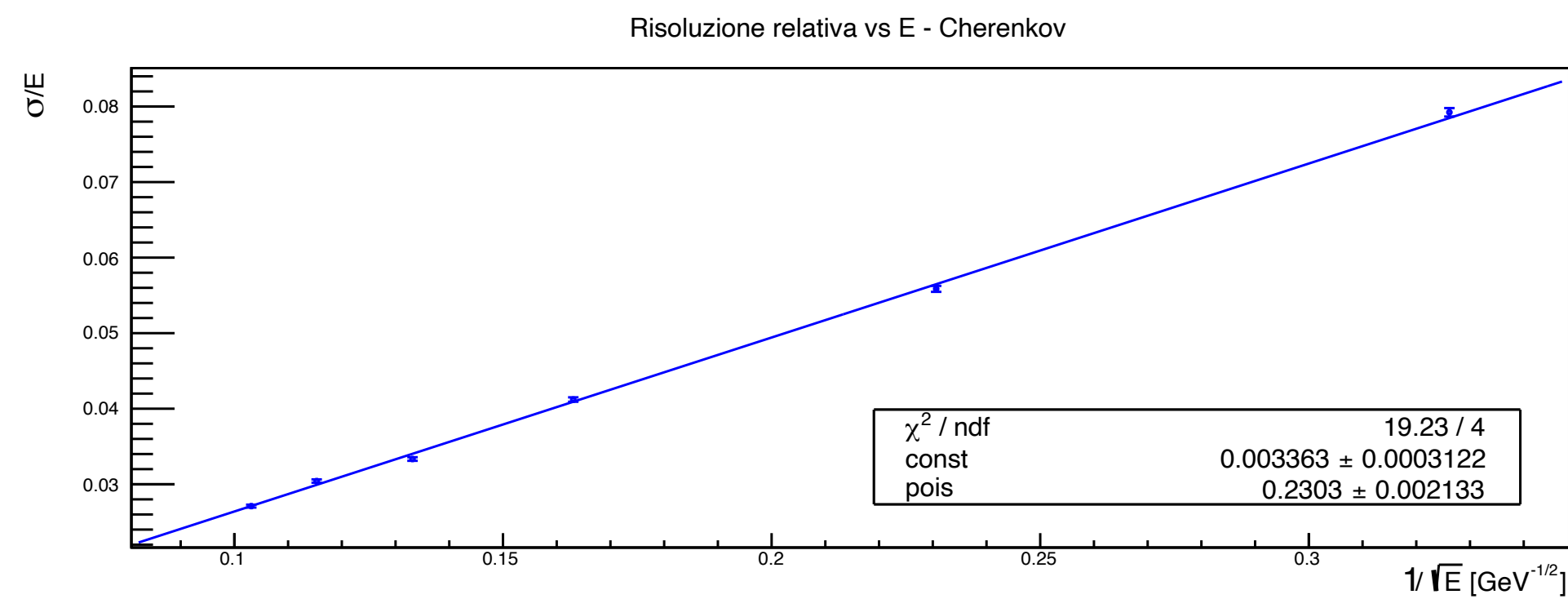
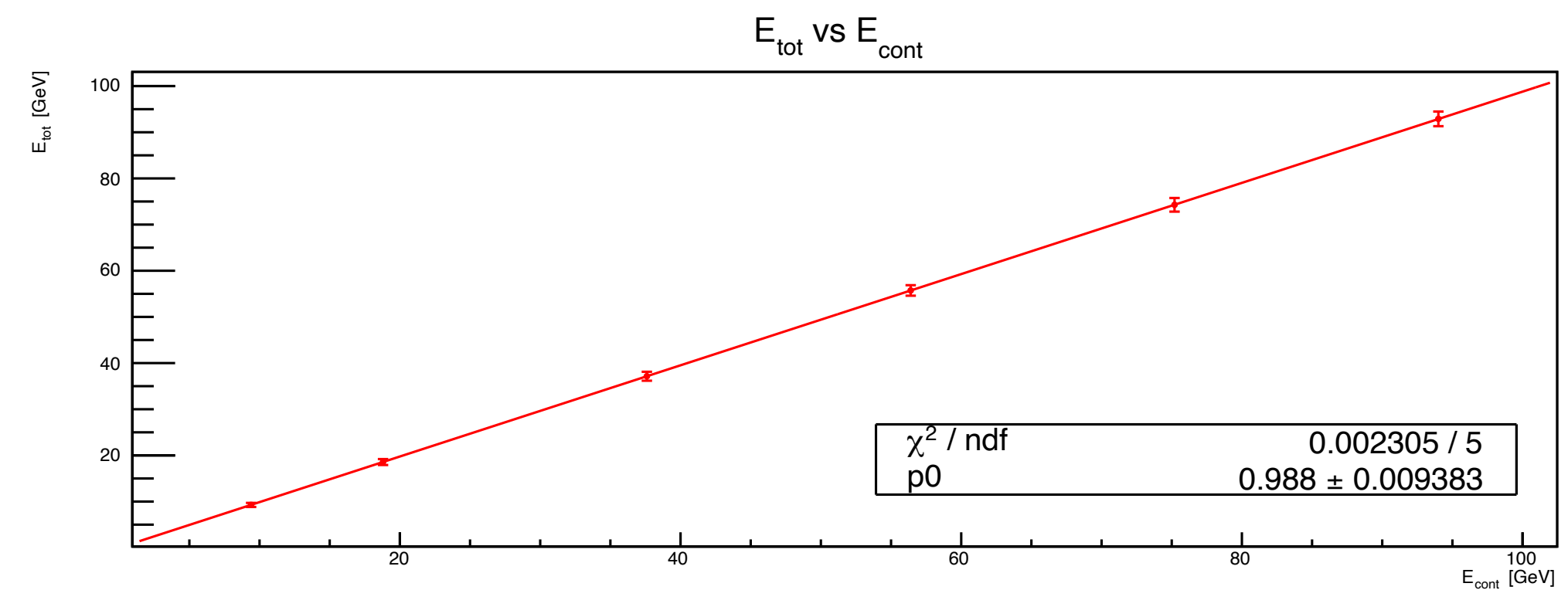
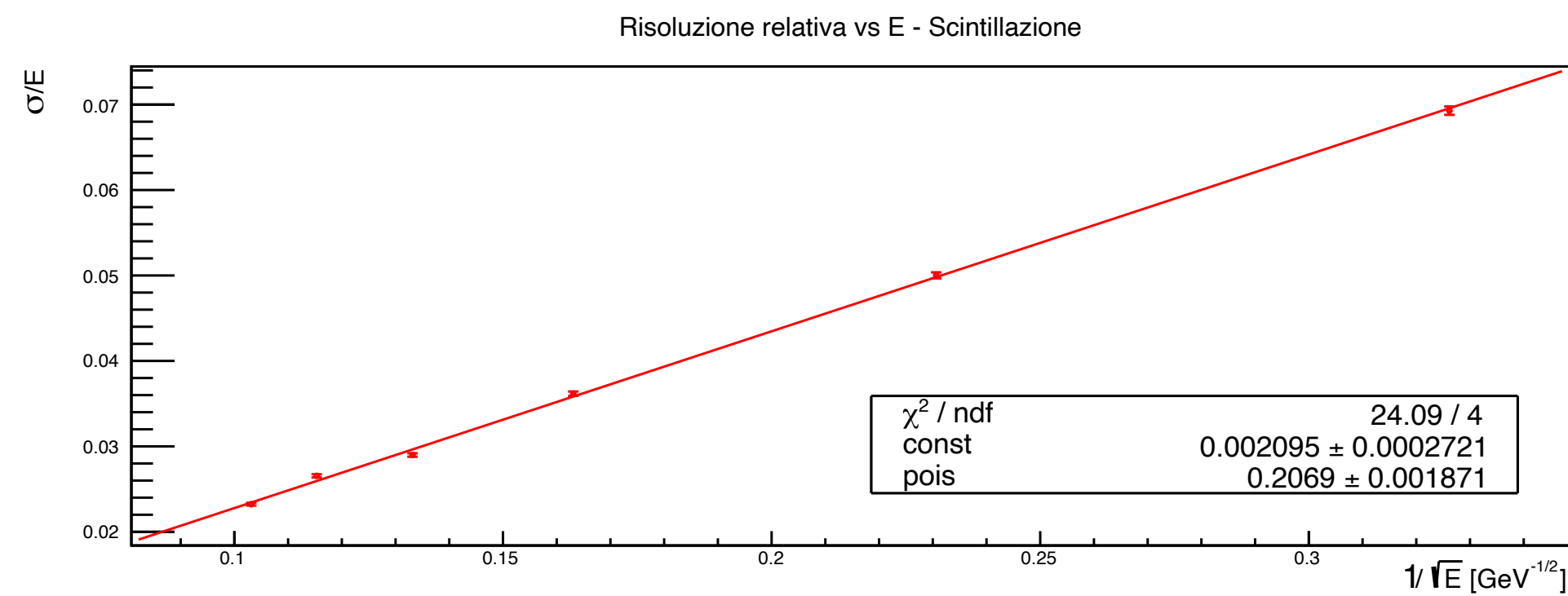


Resolution - E



# Resolution - Run2

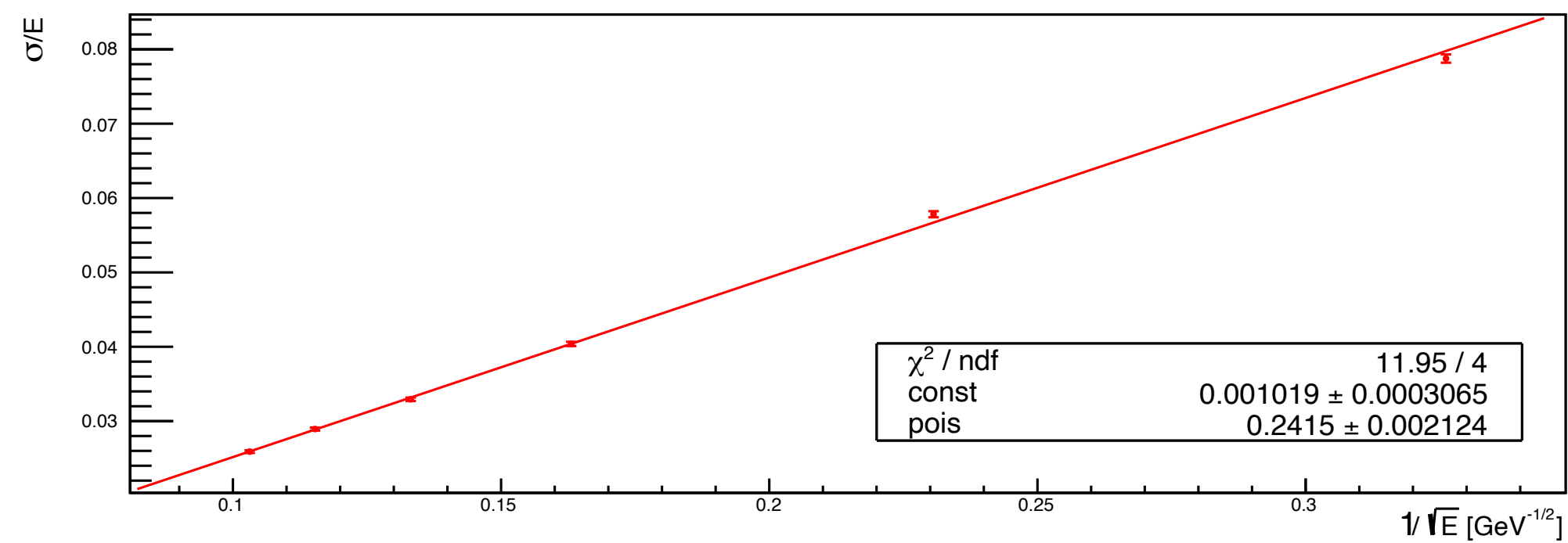
## Electrons in a energy range of 10 to 100 GeV



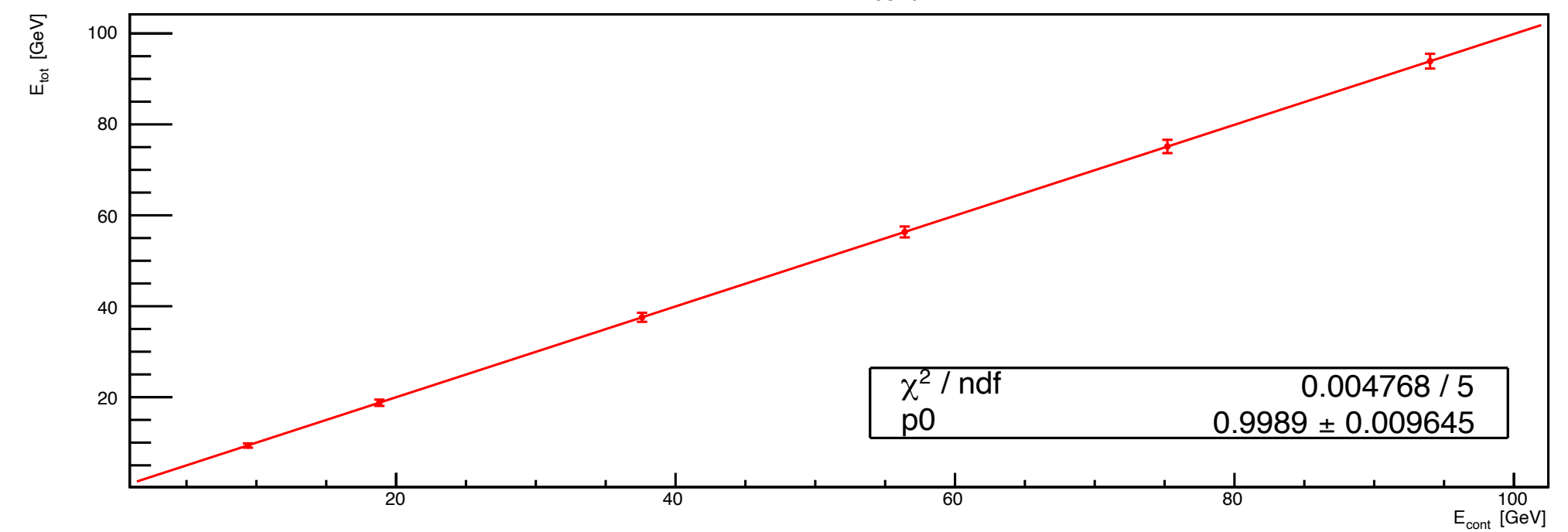
# Resolution - Run3

## Electrons in a energy range of 10 to 100 GeV

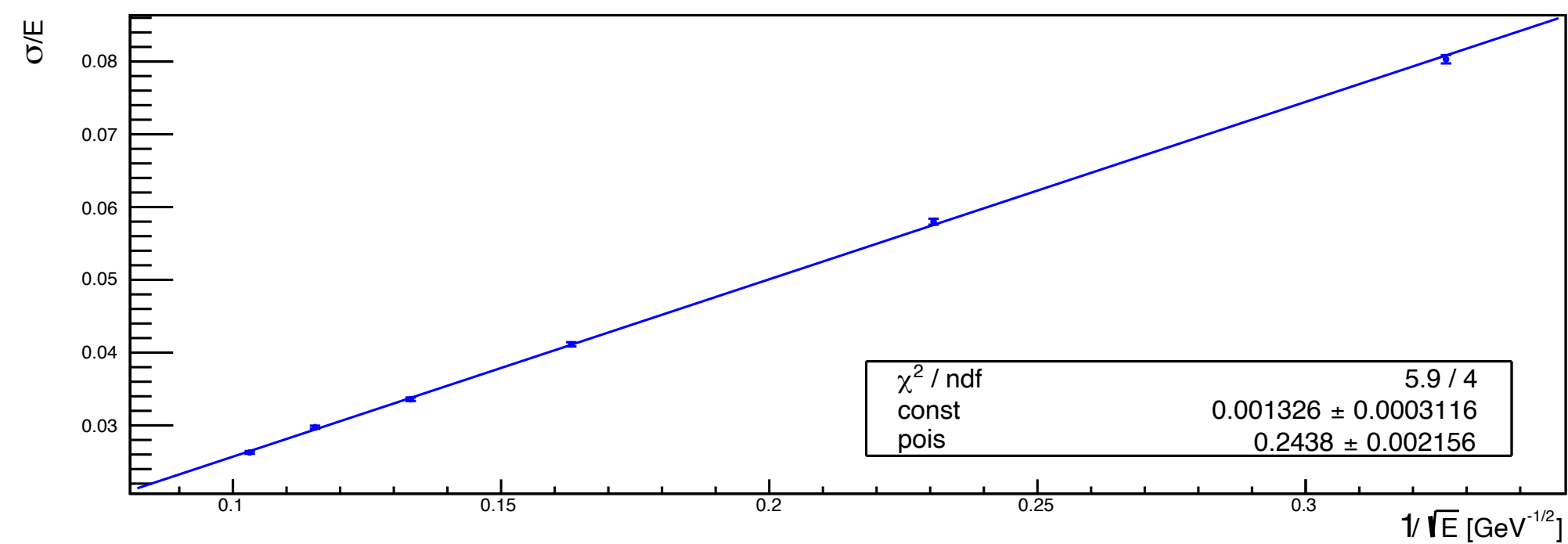
Risoluzione relativa vs E - Scintillazione



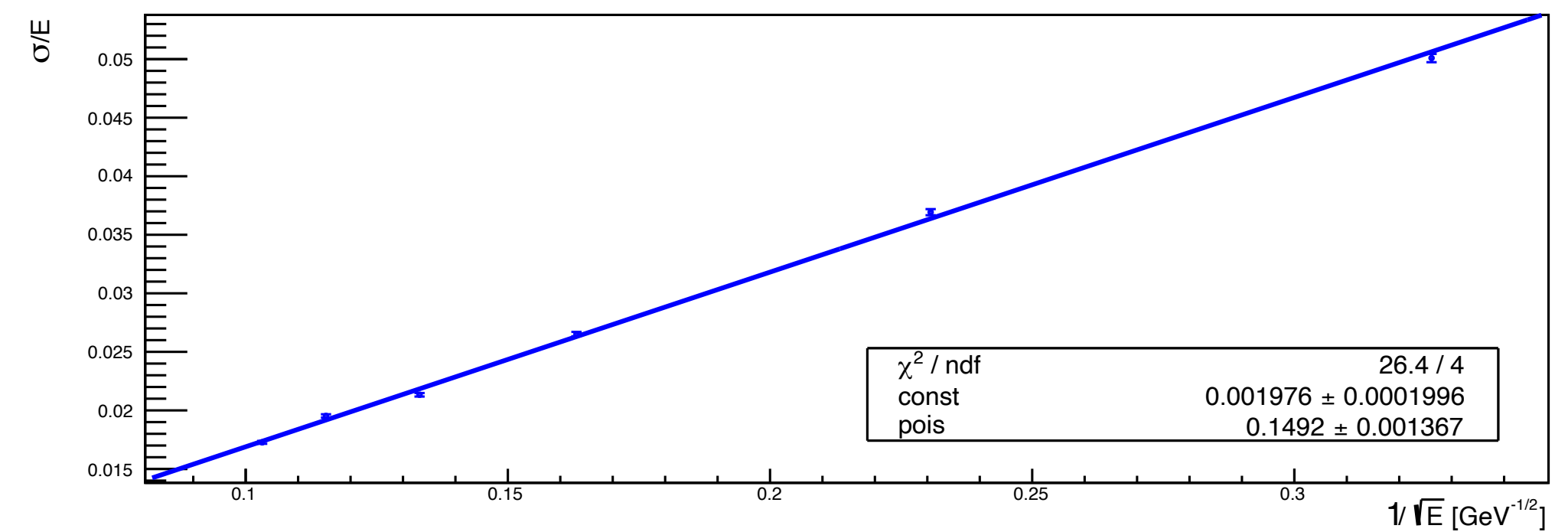
$E_{\text{tot}}$  vs  $E_{\text{cont}}$



Risoluzione relativa vs E - Cherenkov



Risoluzione relativa vs E - Totale

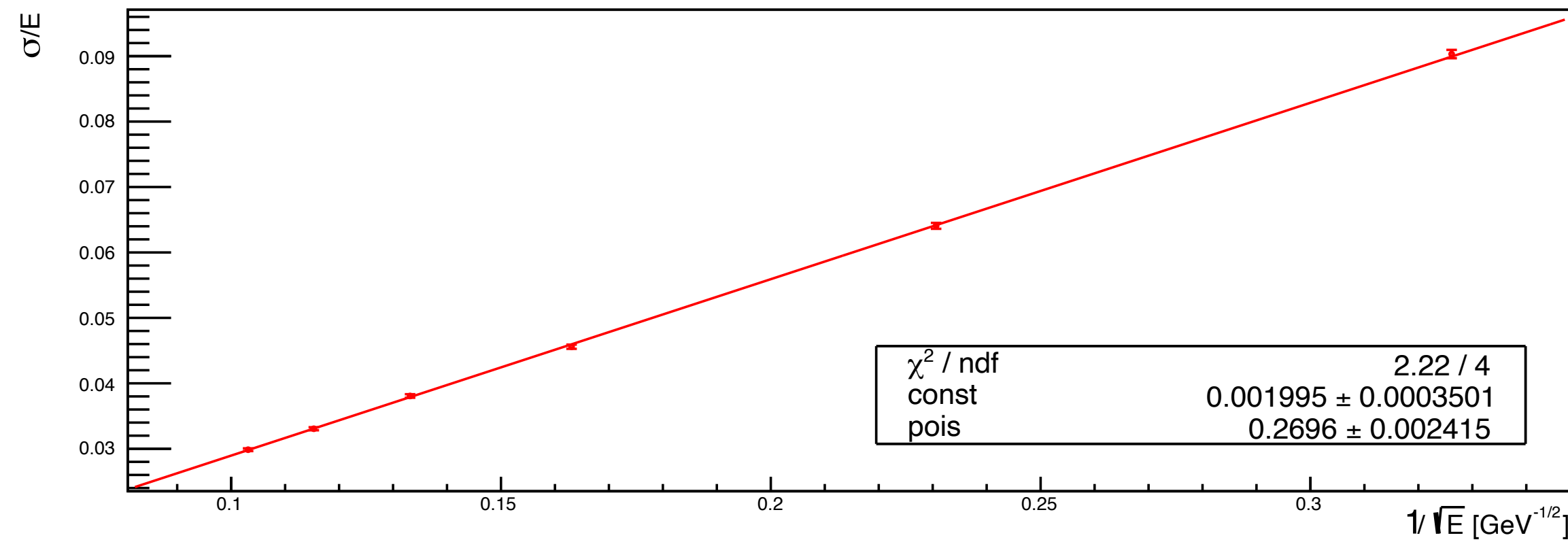




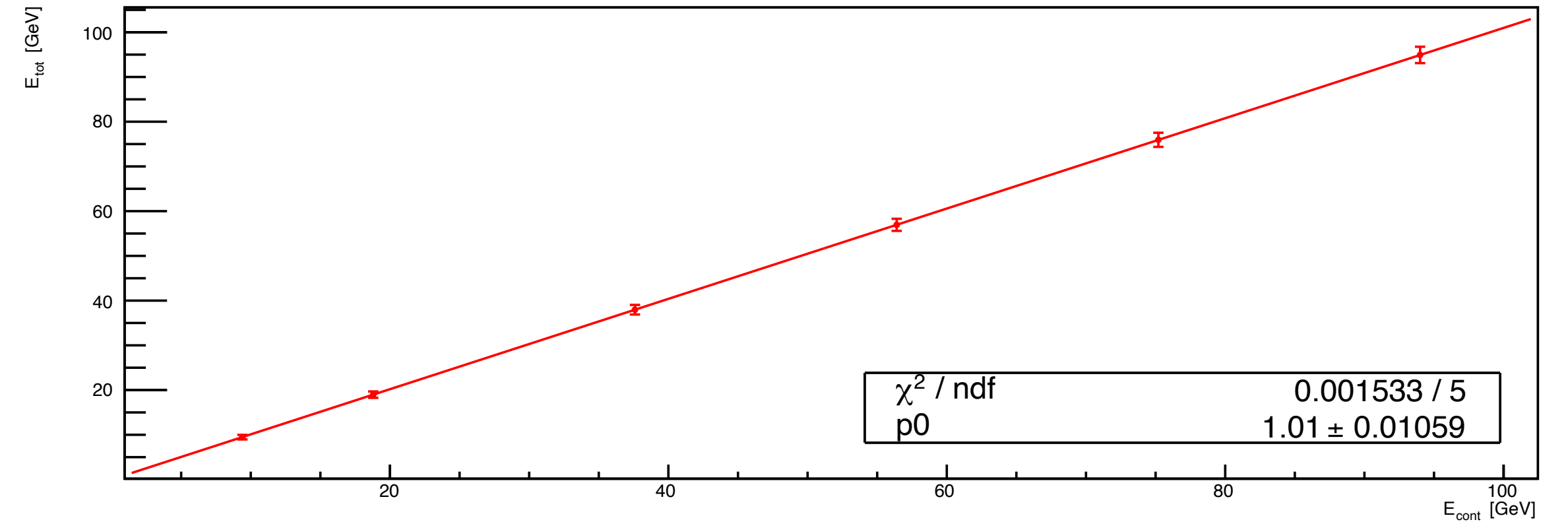
# Resolution - Run4

## Electrons in a energy range of 10 to 100 GeV

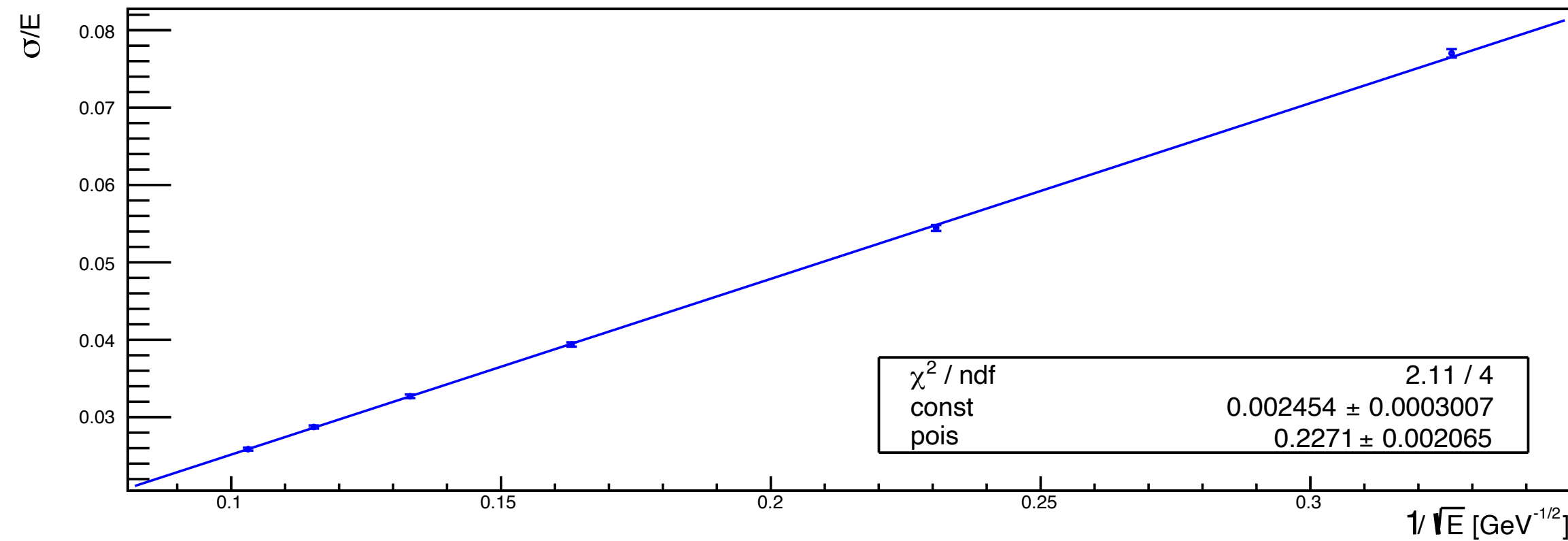
Risoluzione relativa vs E - Scintillazione



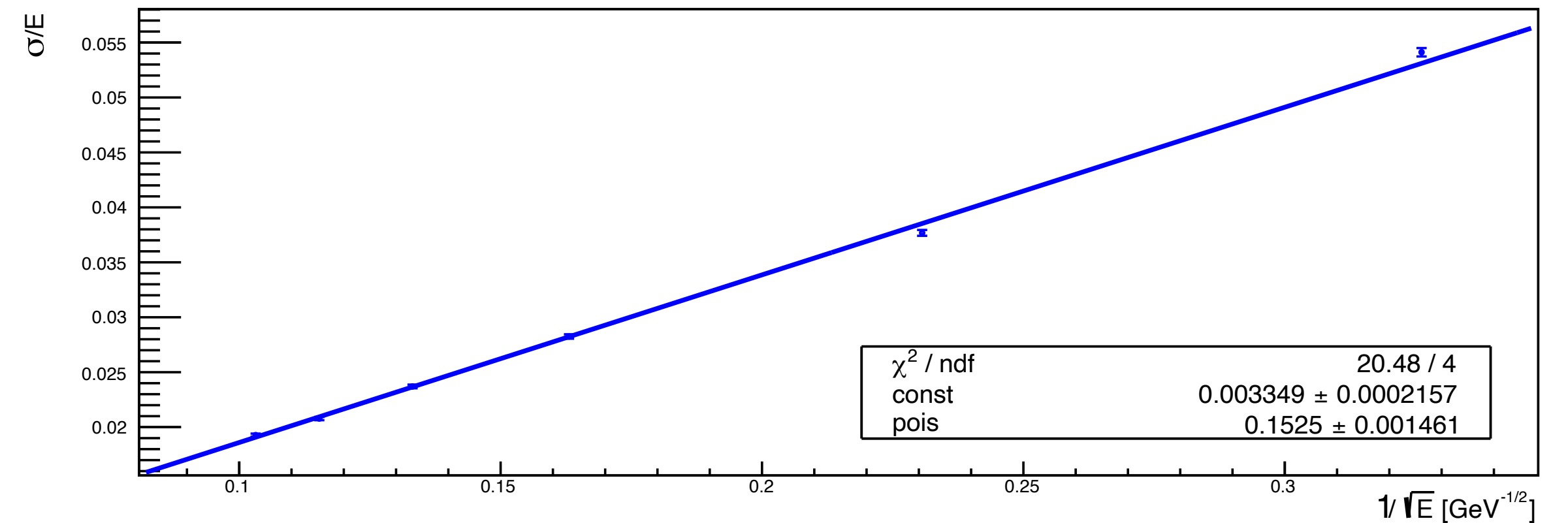
$E_{\text{tot}}$  vs  $E_{\text{cont}}$



Risoluzione relativa vs E - Cherenkov

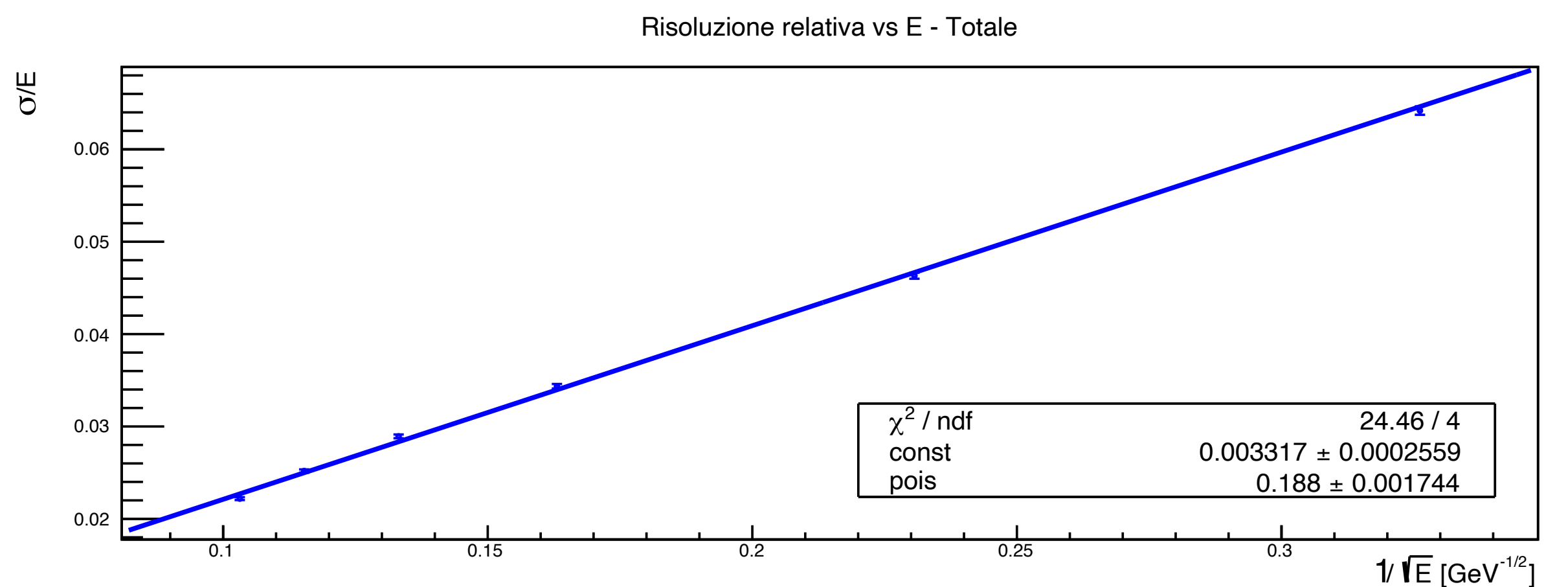
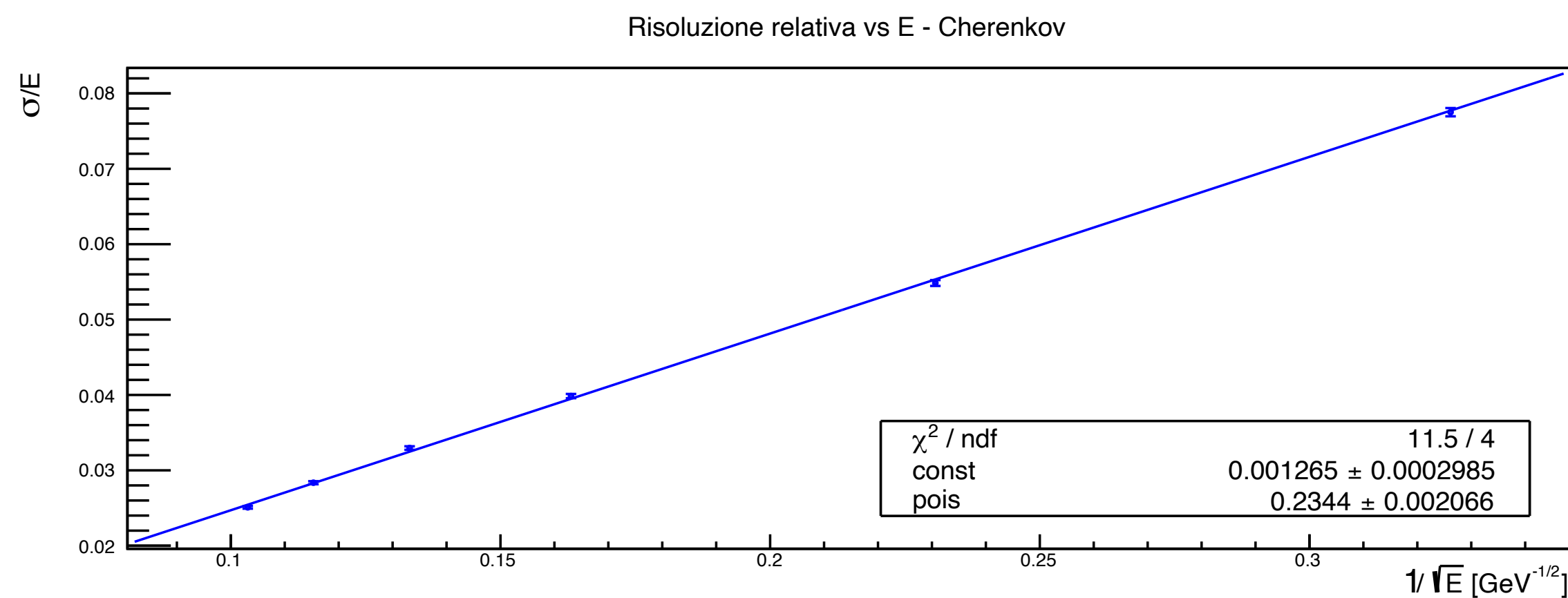
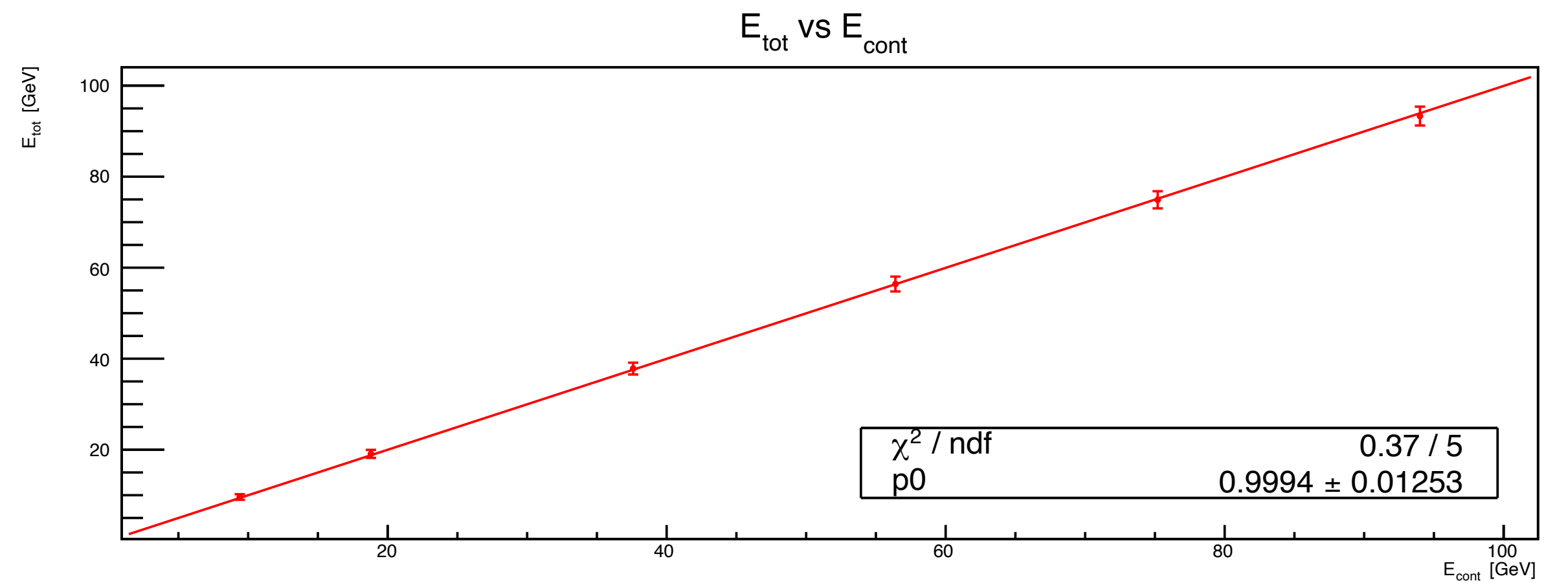
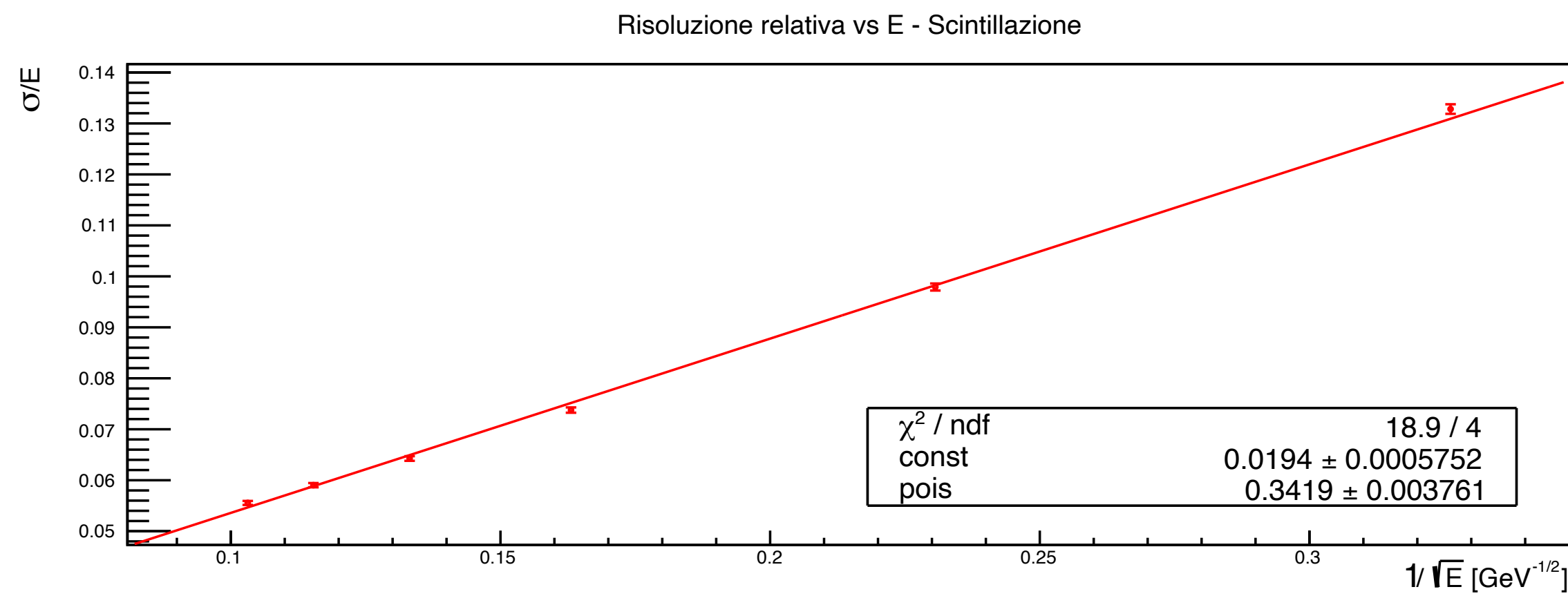


Risoluzione relativa vs E - Totale



# Resolution - Run5

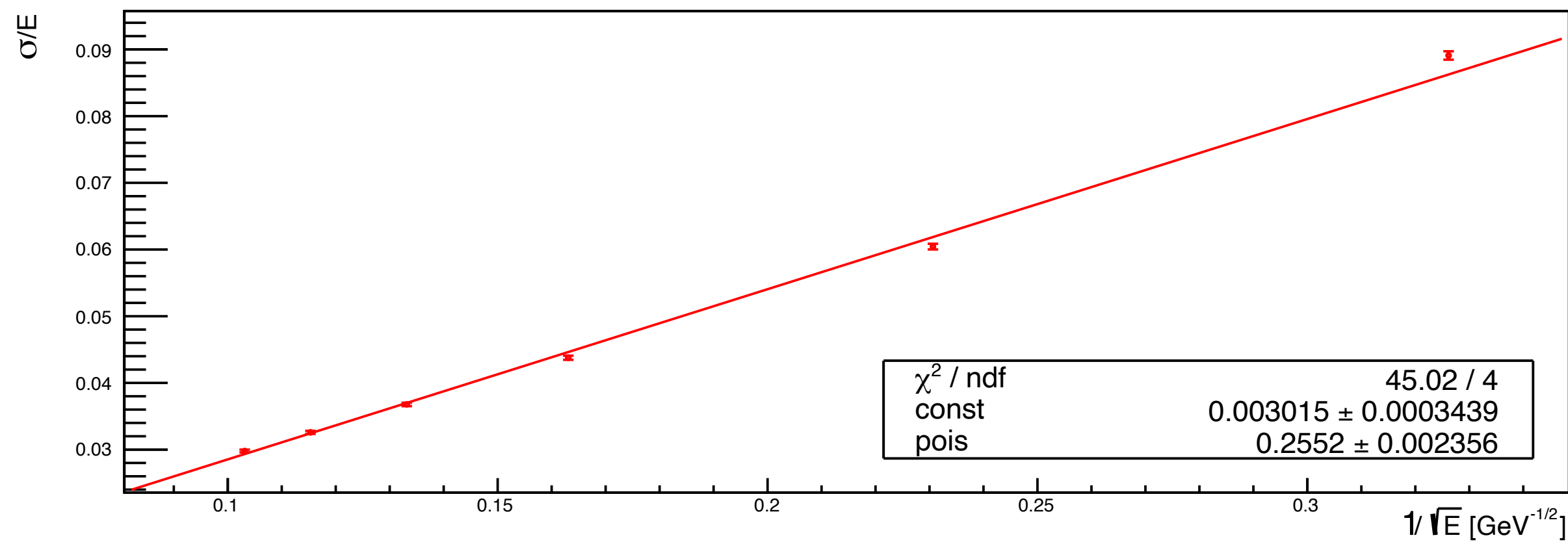
## Electrons in a energy range of 10 to 100 GeV



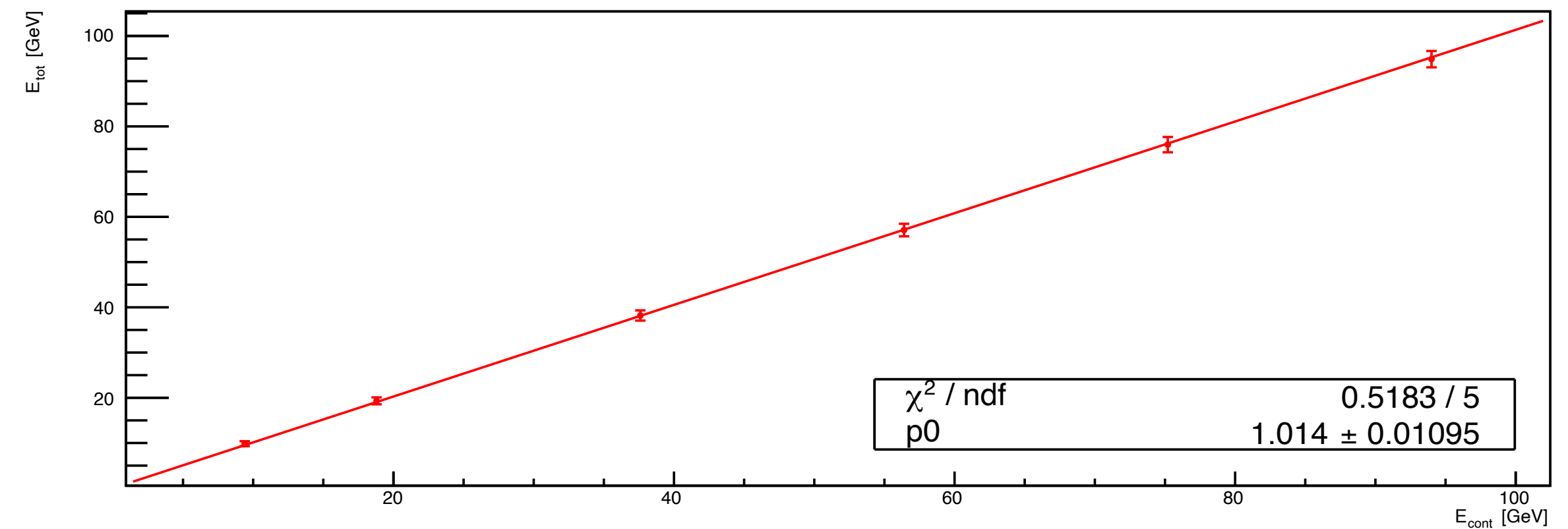
# Resolution - Run6

## Electrons in a energy range of 10 to 100 GeV

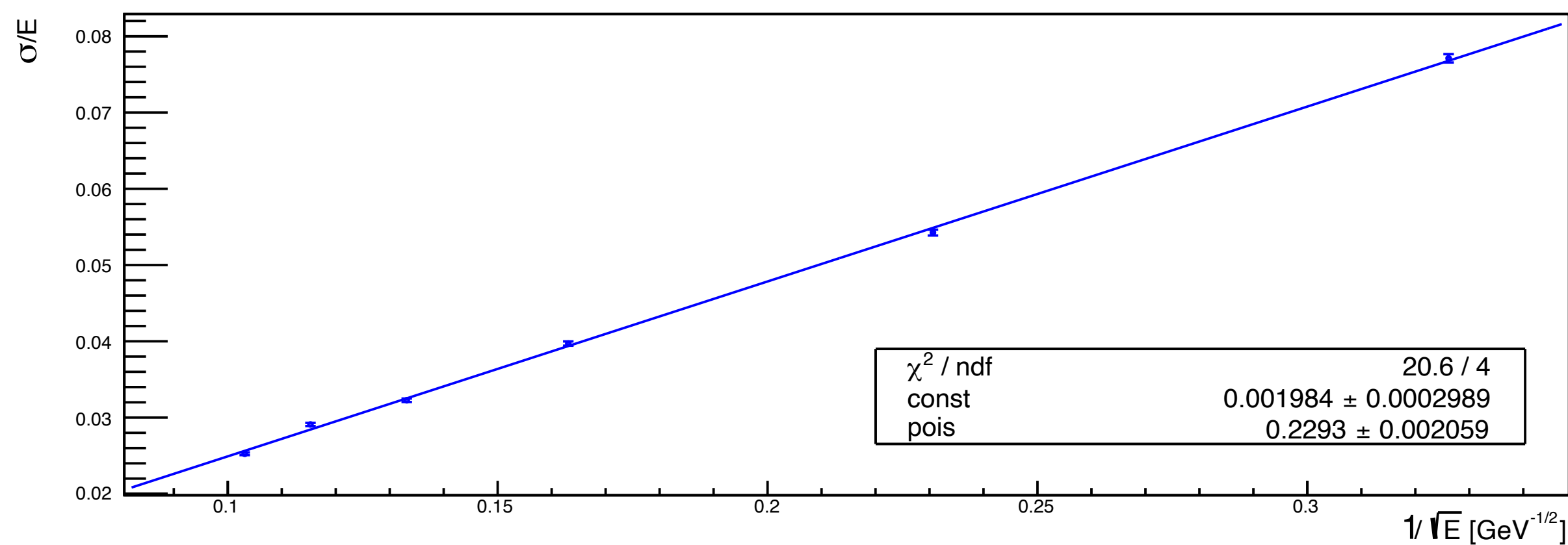
Risoluzione relativa vs E - Scintillazione



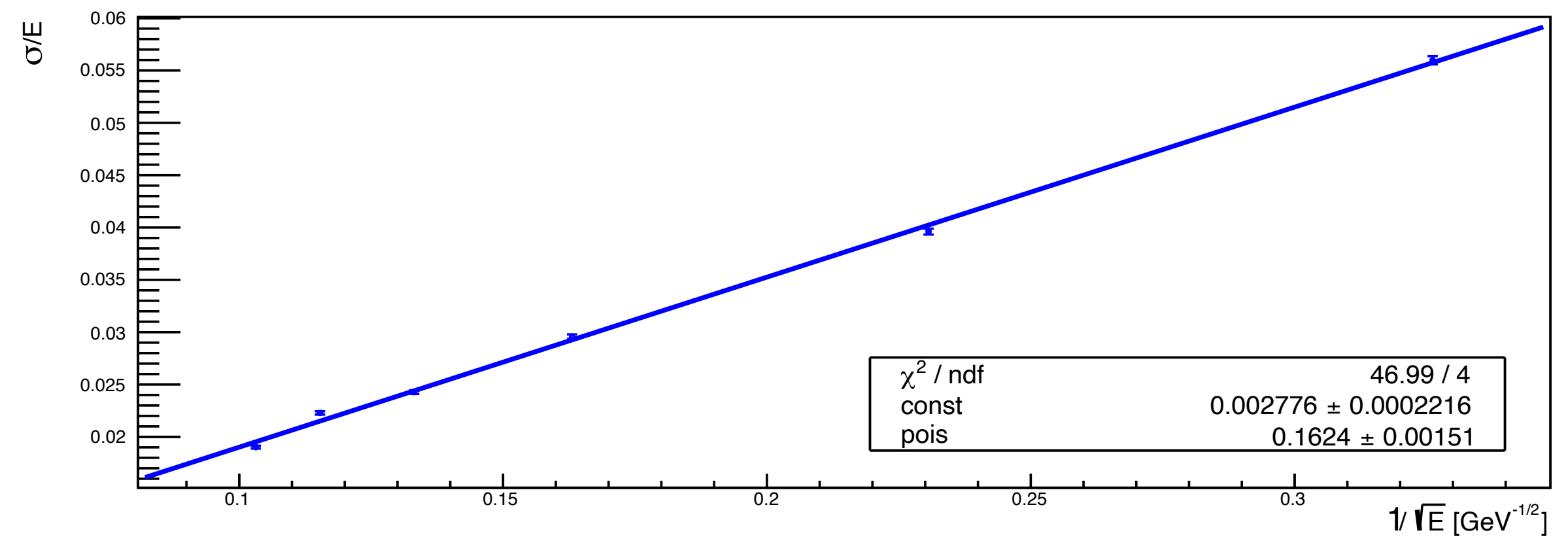
$E_{\text{tot}}$  vs  $E_{\text{cont}}$



Risoluzione relativa vs E - Cherenkov



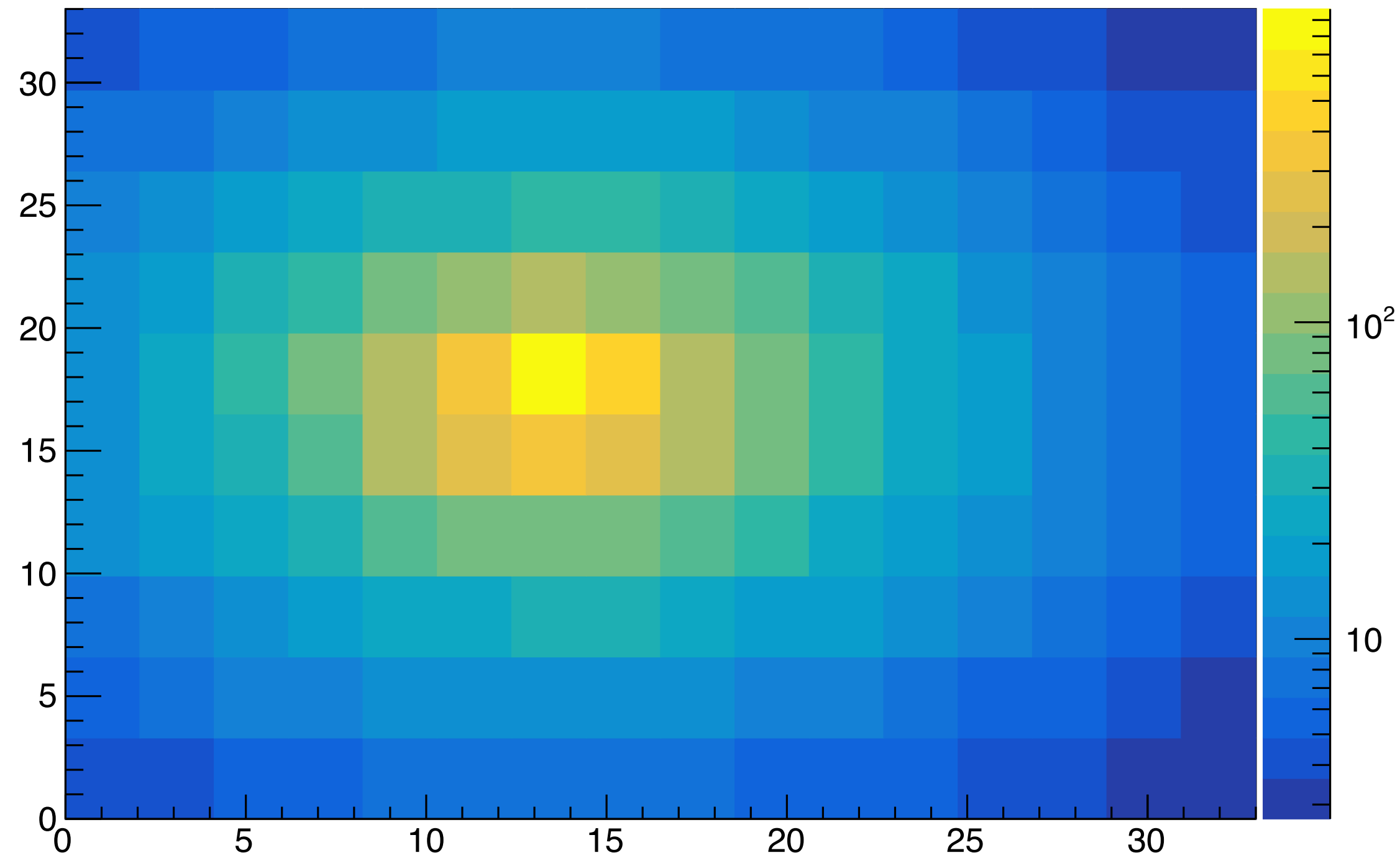
Risoluzione relativa vs E - Totale



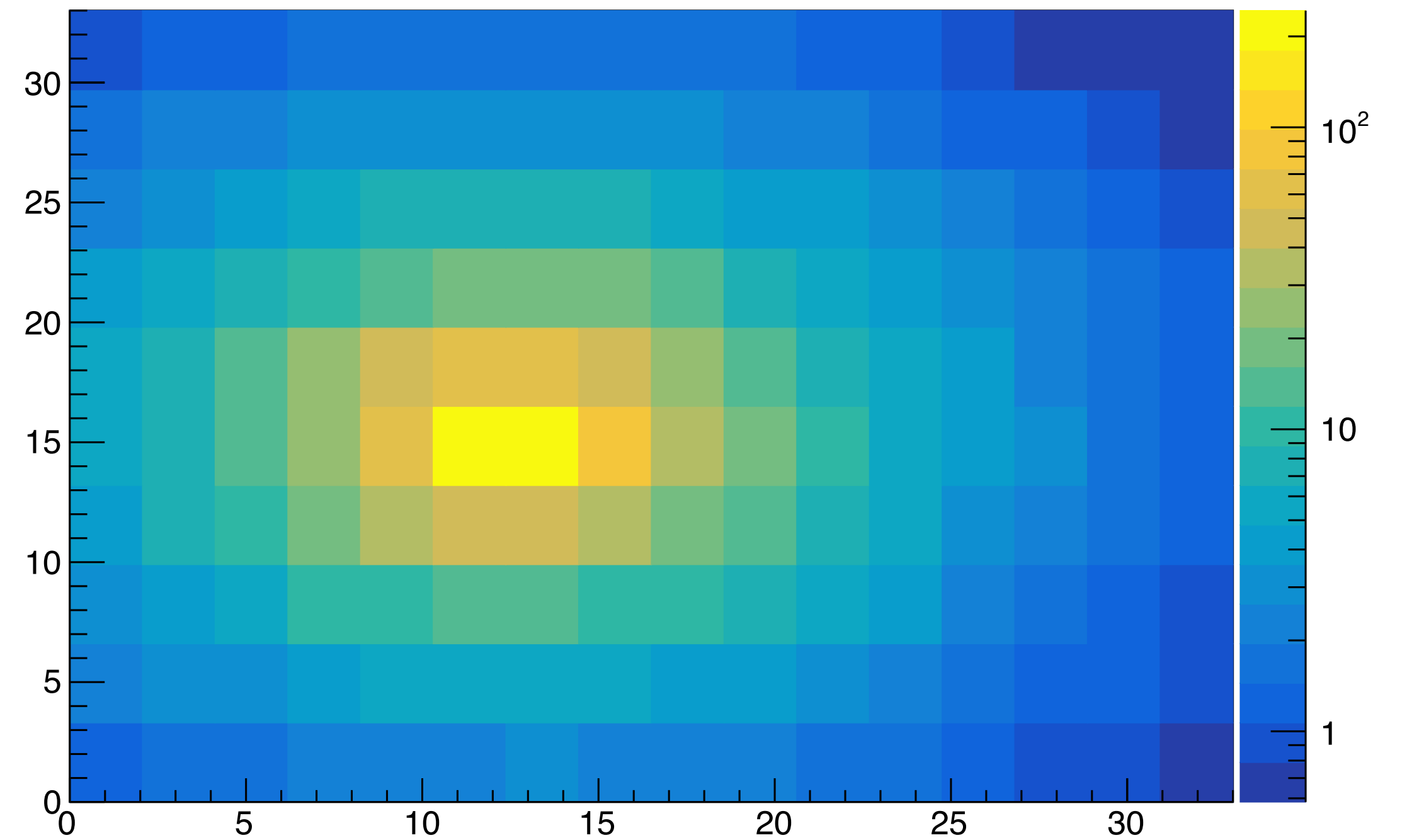
# Signal scatterplot - SiPM tower

Run2 with 40 GeV electrons

ScatterplotS



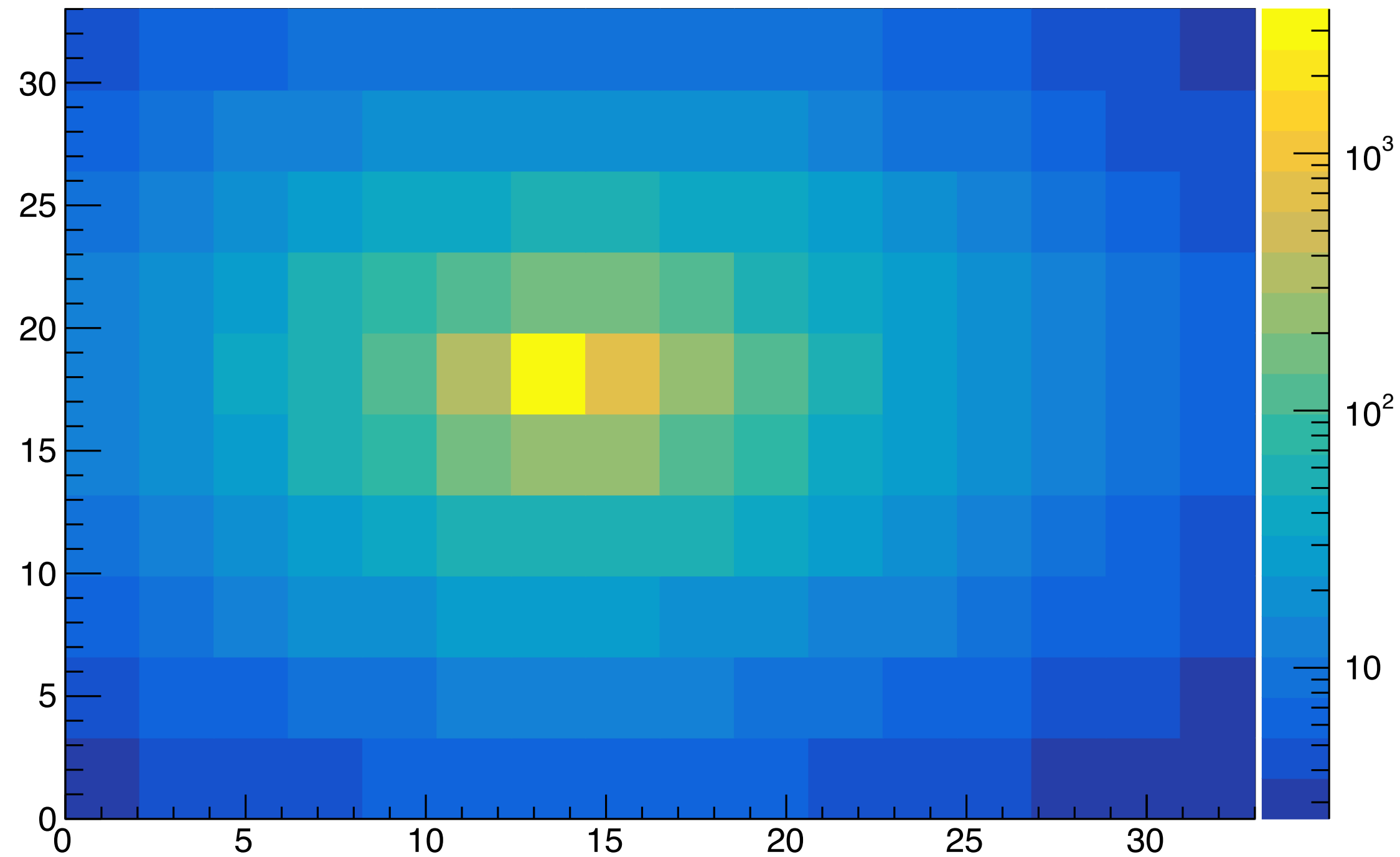
ScatterplotC



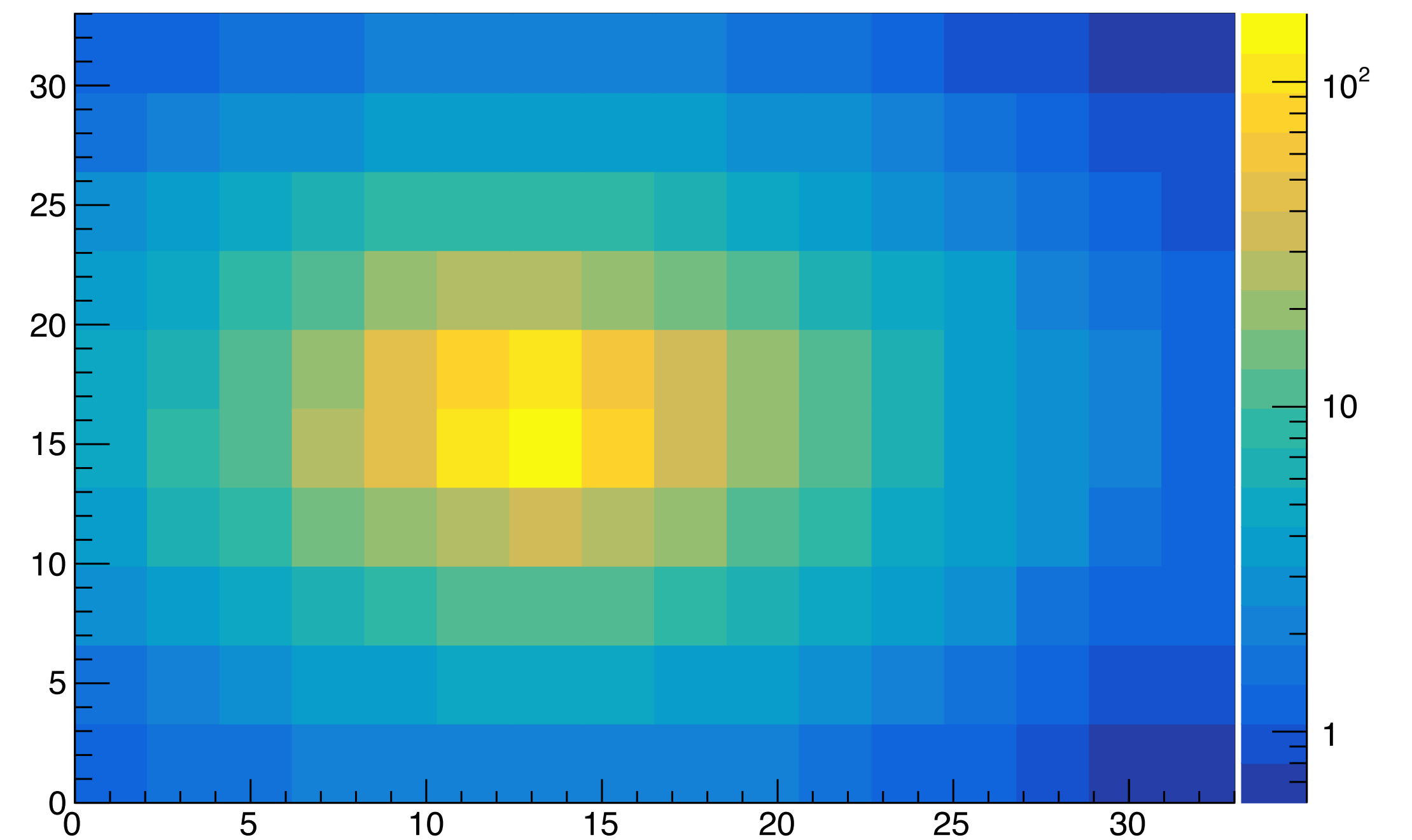
# Signal scatterplot - SiPM tower

Run5 with 40 GeV electrons

ScatterplotS



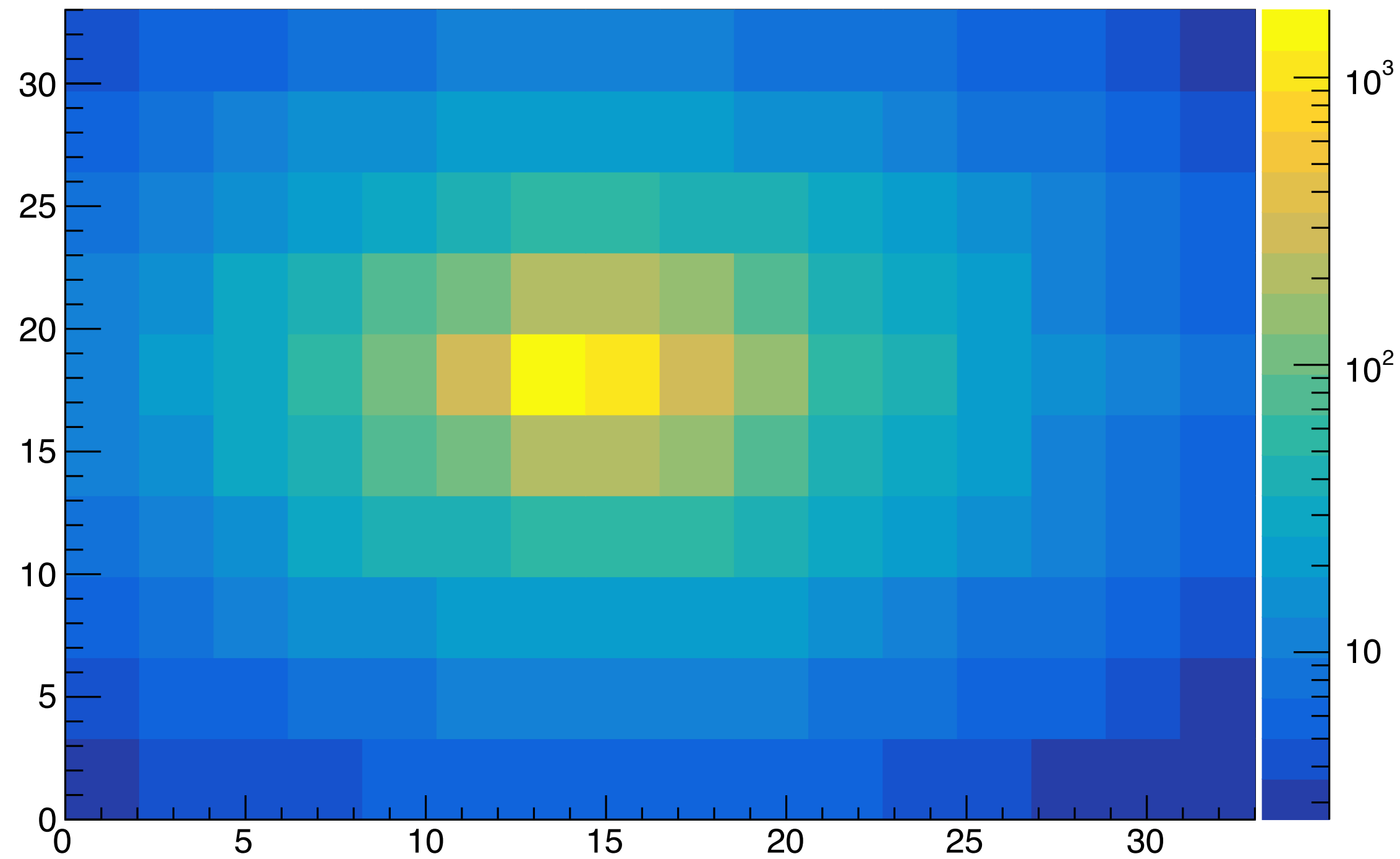
ScatterplotC



# Signal scatterplot - SiPM tower

Run6 with 40 GeV electrons

ScatterplotS



ScatterplotC

