



*Mohamed I University  
Faculty of Sciences  
Oujda*

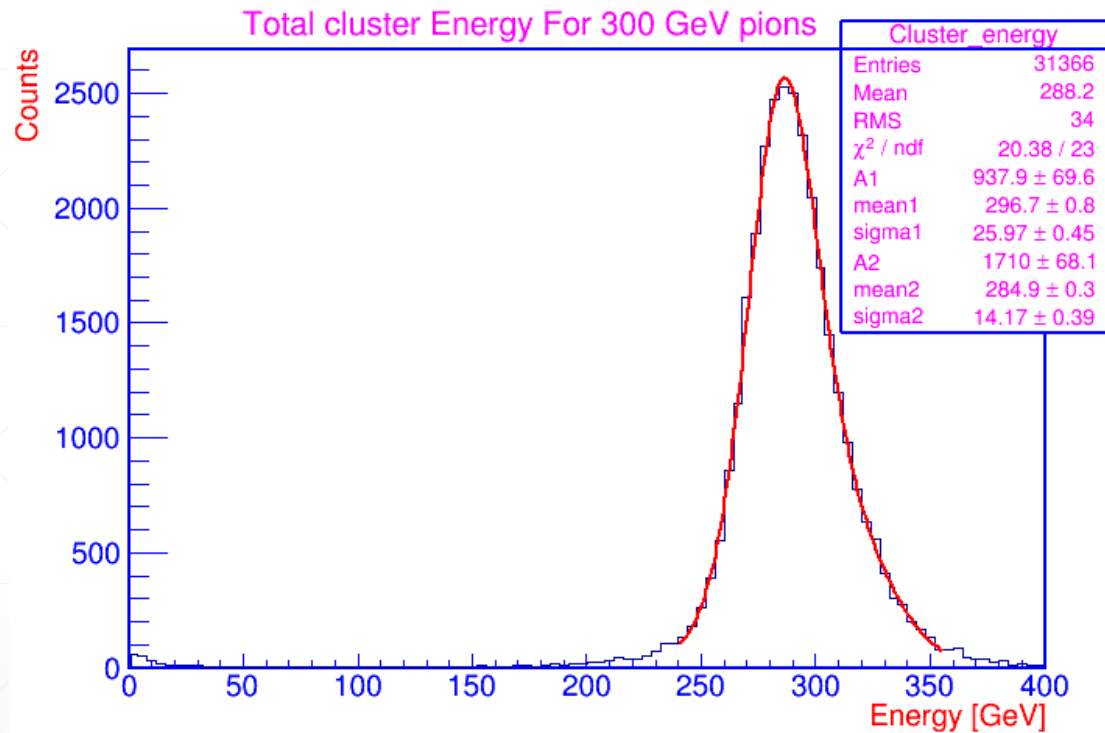
# *FCAL Analysis Pions Test Beam*

---

**Dahbi Salah-Eddine**  
**Laboratory of Physics of Matter and Radiation**

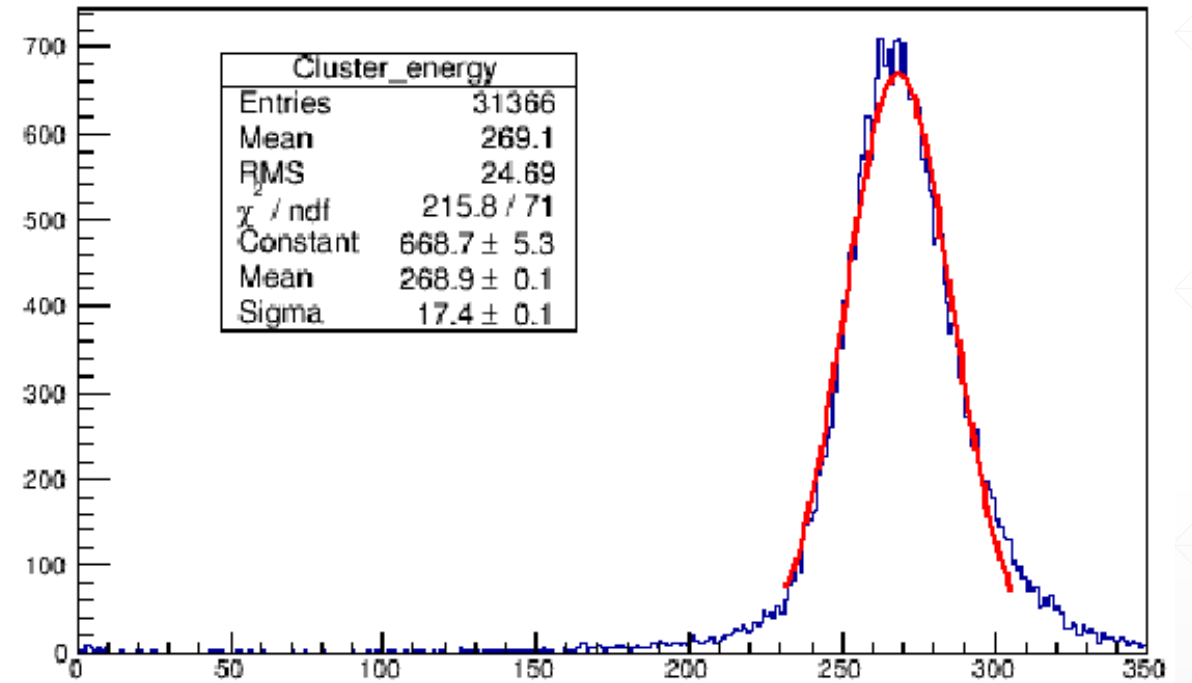
# COMPARISON

- Limited eta between 3.4 and 4.4



```
sigma= 21.751
mean= 290.833
Energy resolution= 7.47887%
*****Energy Resolution Error *****
delta-Energy-Resolution = 0.288958%
```

Total cluster Energy

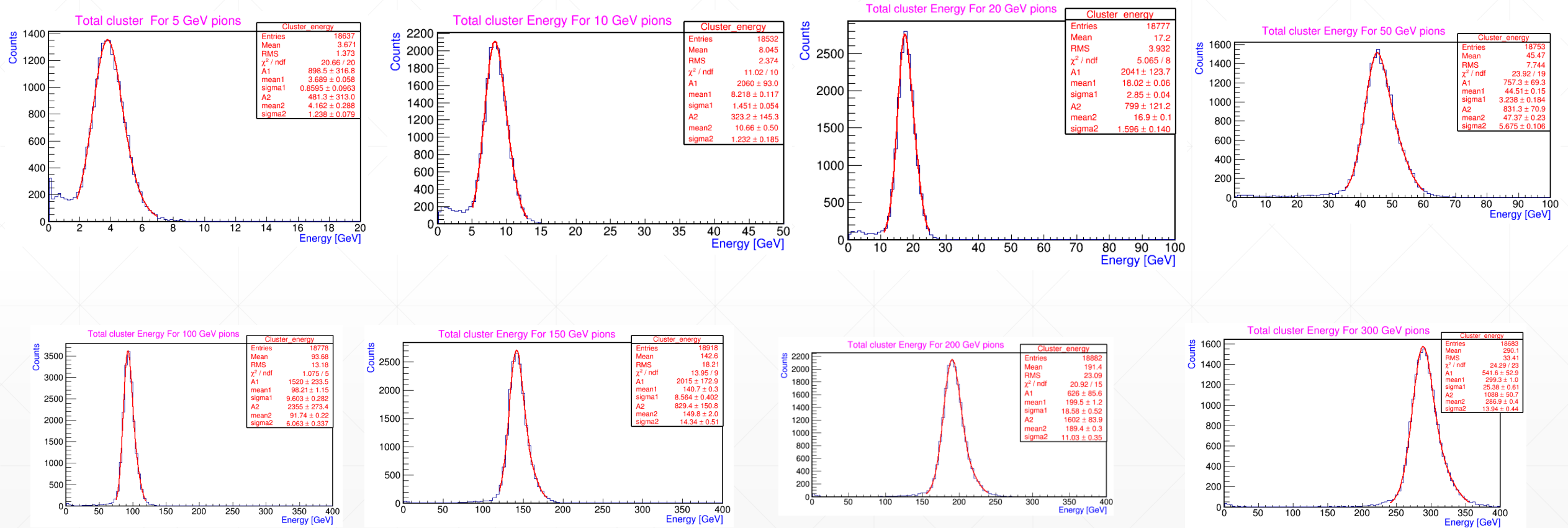


Mr. Bengt Lund-jensen analysis for 300 GeV pions.

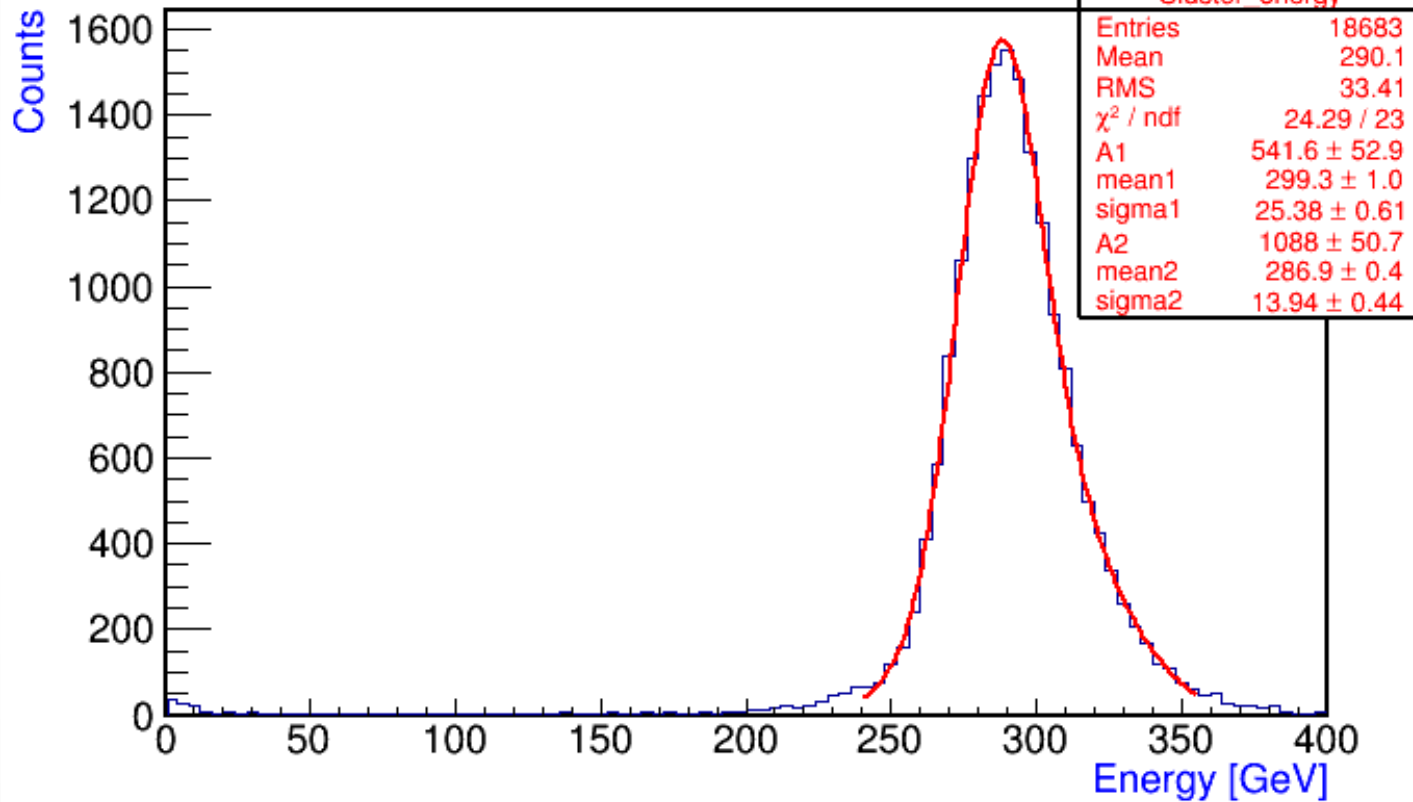
$R_E = 6,466 \%$

# ENERGY DISTRIBUTION FOR PIONS

- Analysis so far limited eta between 3.5 and 4.1



Total cluster Energy For 300 GeV pions

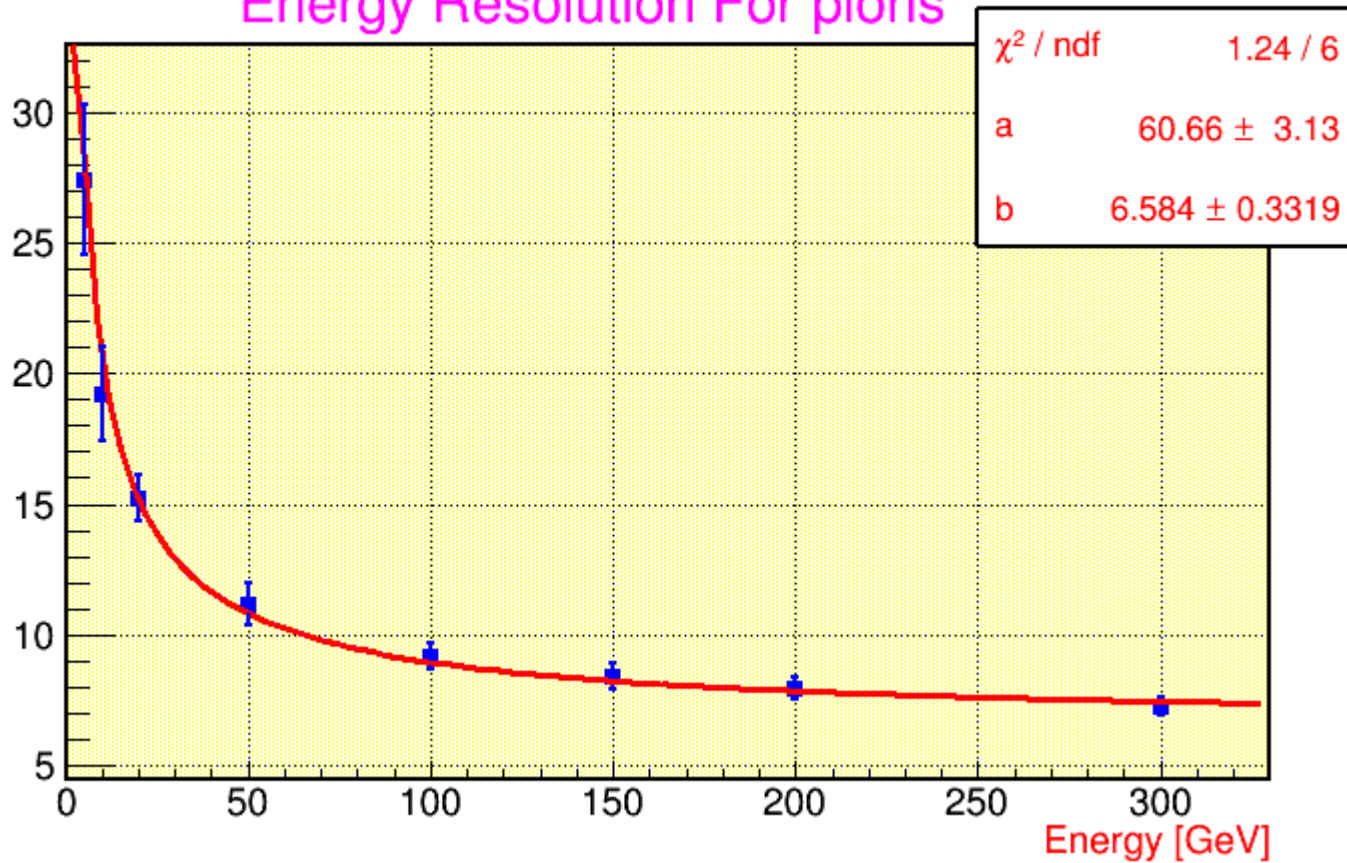


- *300 GeV Pions.*
- *Fit with double Gaussian*
- *Fit with Double Gaussian:*

❖ *Energy Resolution :*

$$\sigma_E = 7.21816 \pm 0.37052 \quad [\%]$$

## Energy Resolution For pions



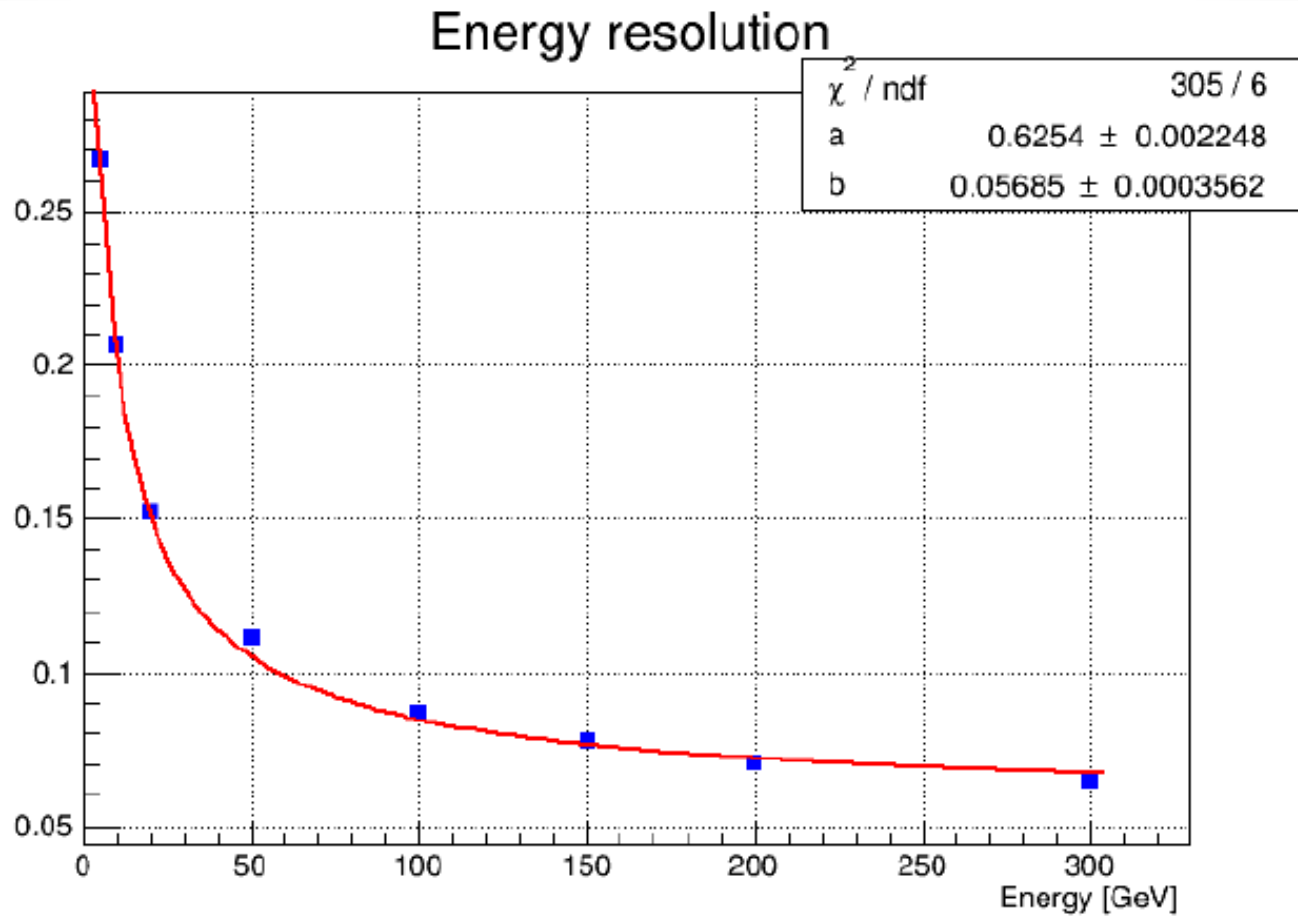
- *Energy Resolution vs Energy.*
- *From Double Gaussian.*
- *Eta between 3.5 and 4.1 .*
- *Fit with :*

$$\frac{\sigma_E}{E} = \frac{a}{\sqrt{E}} \oplus b$$

$$a = 60.66 \% \sqrt{\text{GeV}}$$

$$b = 6.584 \%$$

- Mr. Bengt Lund-jensen analysis for pions.



- *Energy Resolution vs Energy.*
- *From Simple Gaussian.*
- *Eta between 3.4 and 4.4 .*
- *Fit with :*

$$\frac{\sigma_E}{E} = \frac{a}{\sqrt{E}} \oplus b$$

$$a = 62.54 \% \sqrt{\text{GeV}}$$

$$b = 5.685 \%$$