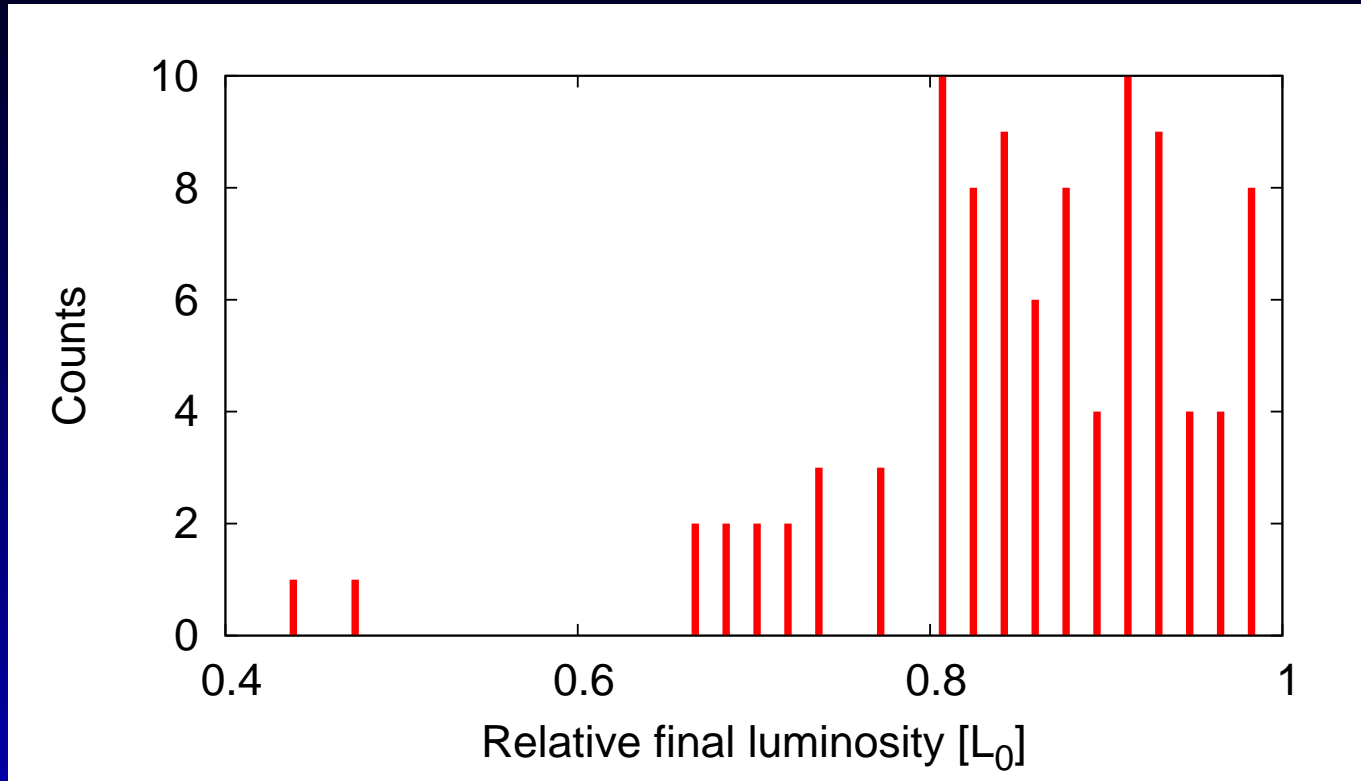


ATF2 ultra low betas

R. Tomás

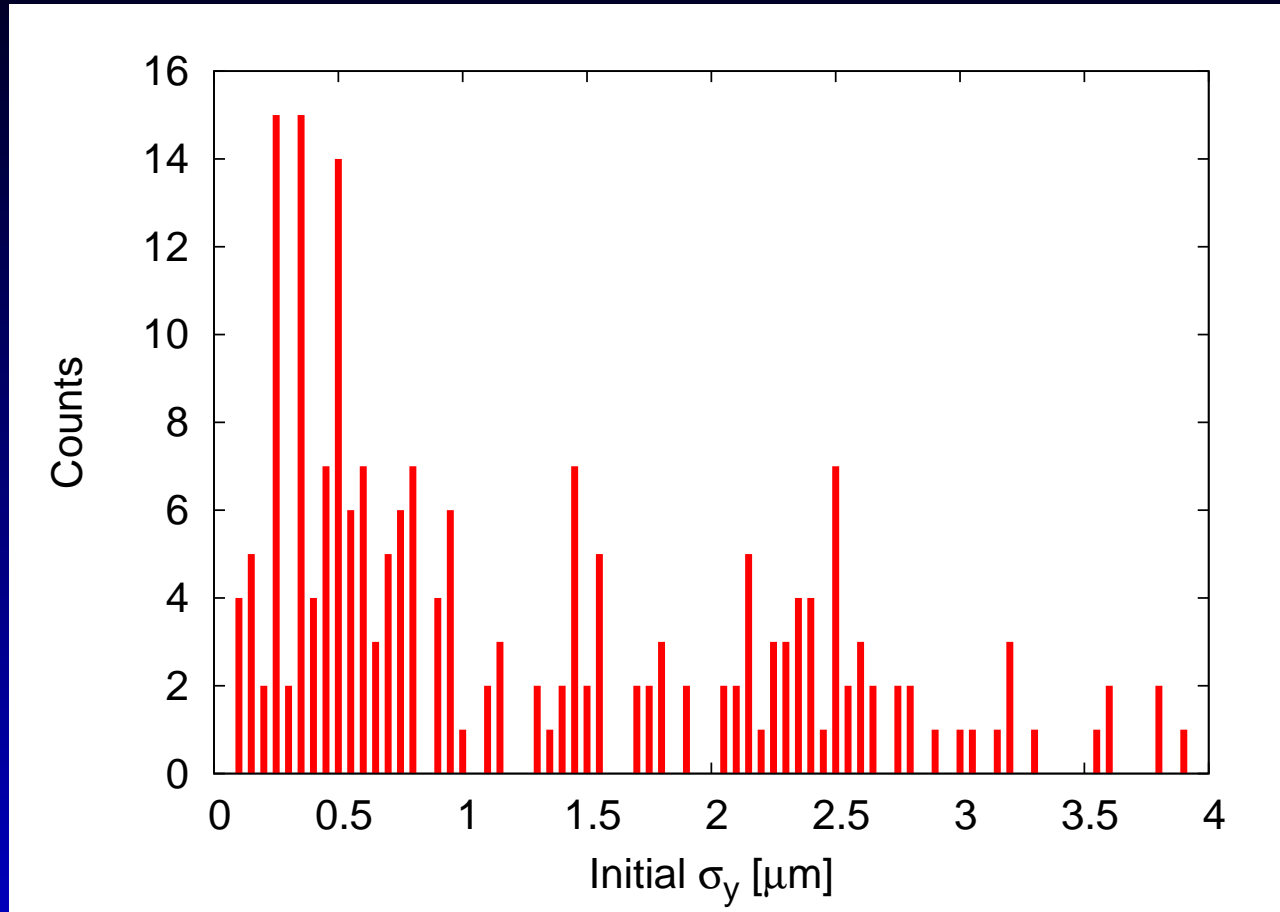
September 2008

CLIC: Luminosity after tuning



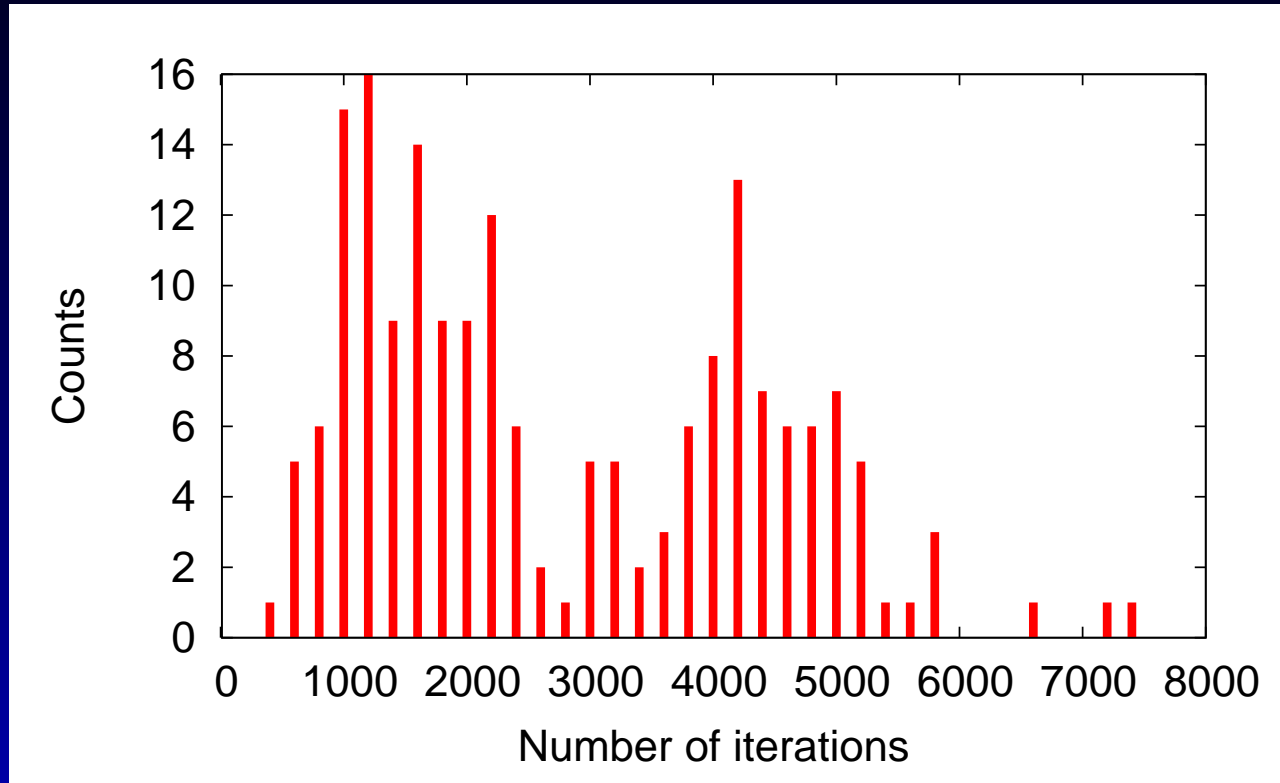
80% of the seeds give more than 80% of the design luminosity \rightarrow 20% fail.

ATF2: Initial σ_y for 150 seeds



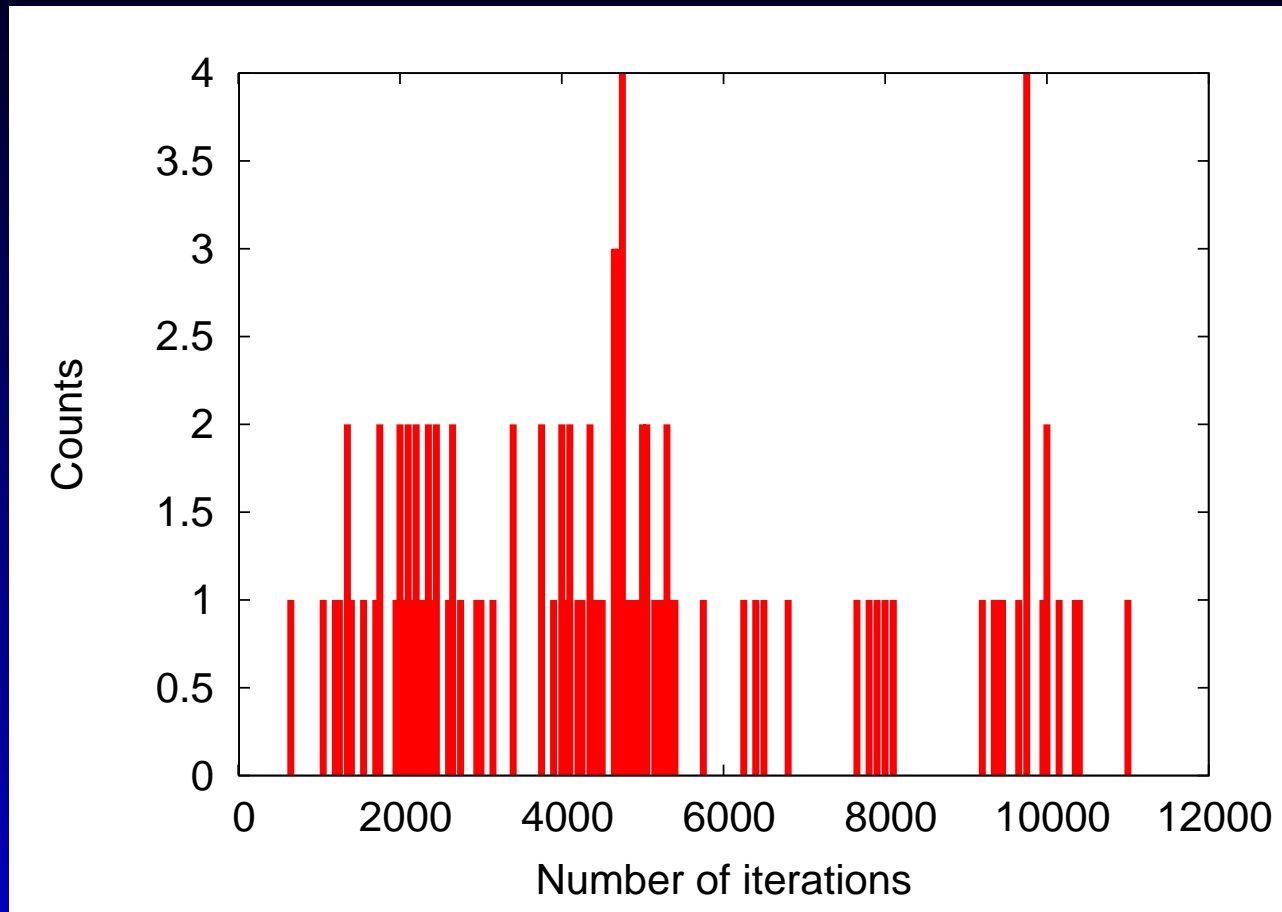
Up to $4\mu\text{m}$ of initial σ_y .

Number of iterations for $\beta_y=0.1\text{mm}$



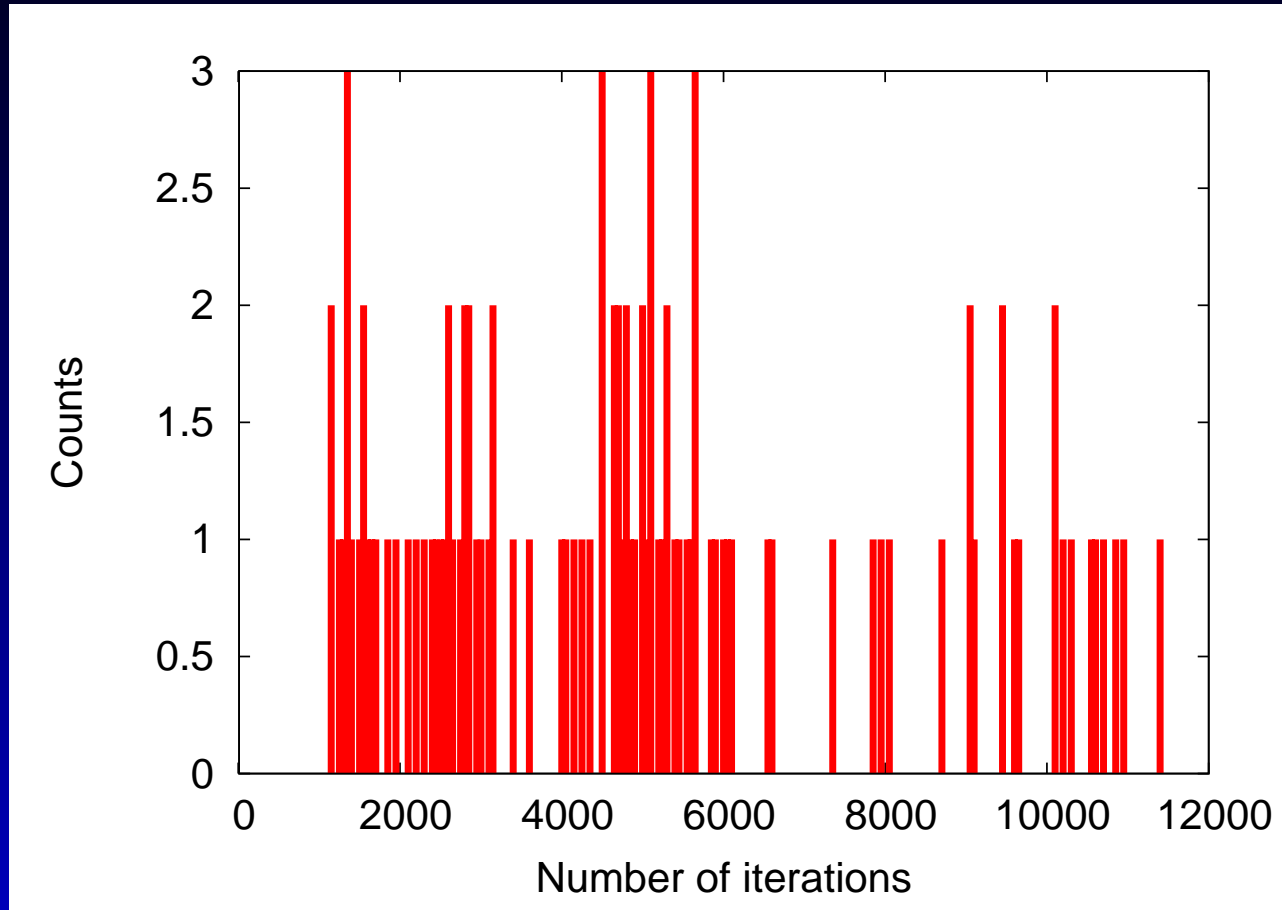
Below 8000 iterations required.

Number of iterations for $\beta_y=0.05\text{mm}$

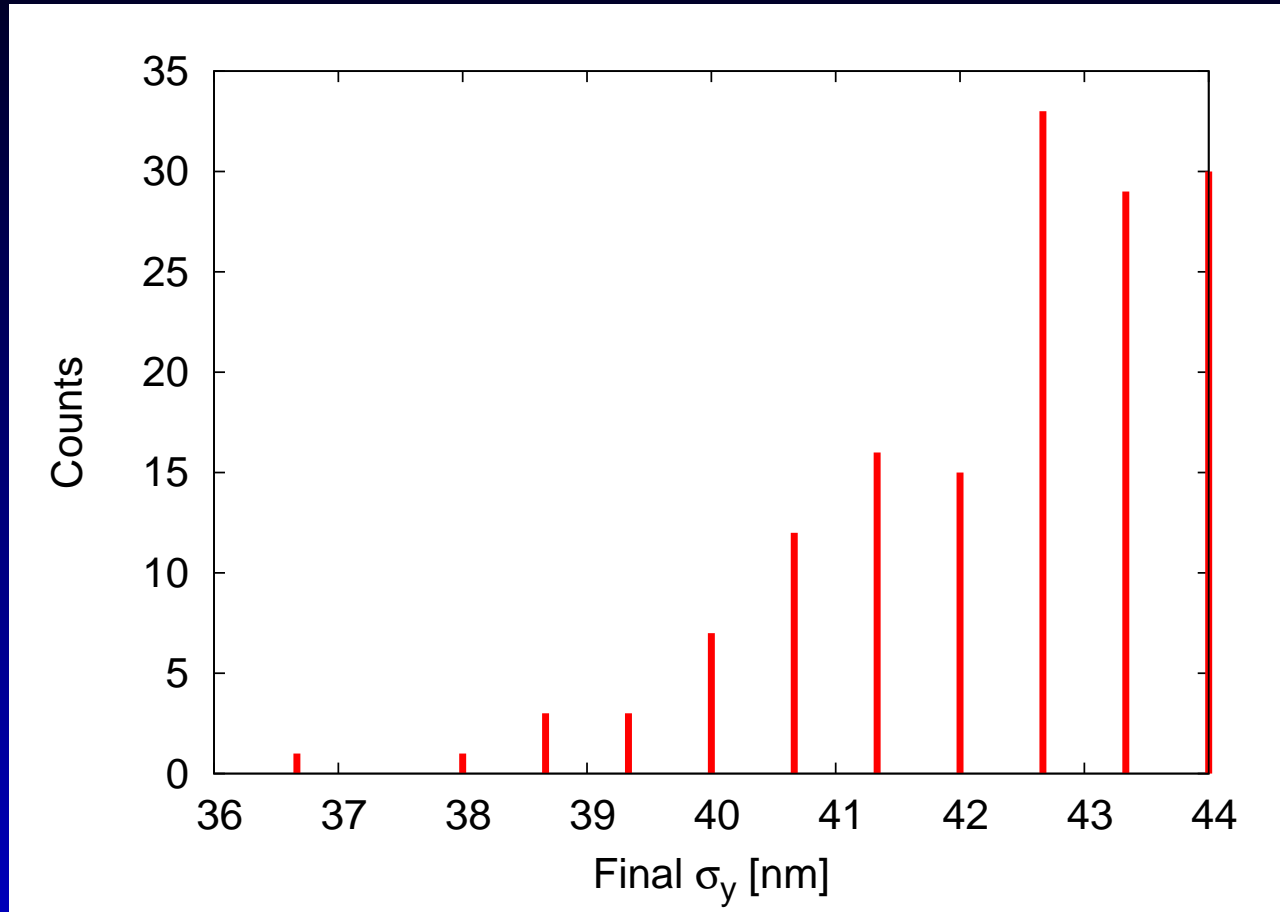


Below 12000 iterations required but maximum is hit.
More iterations are required for lower β !

Number of iterations for $\beta_y=0.025\text{mm}$

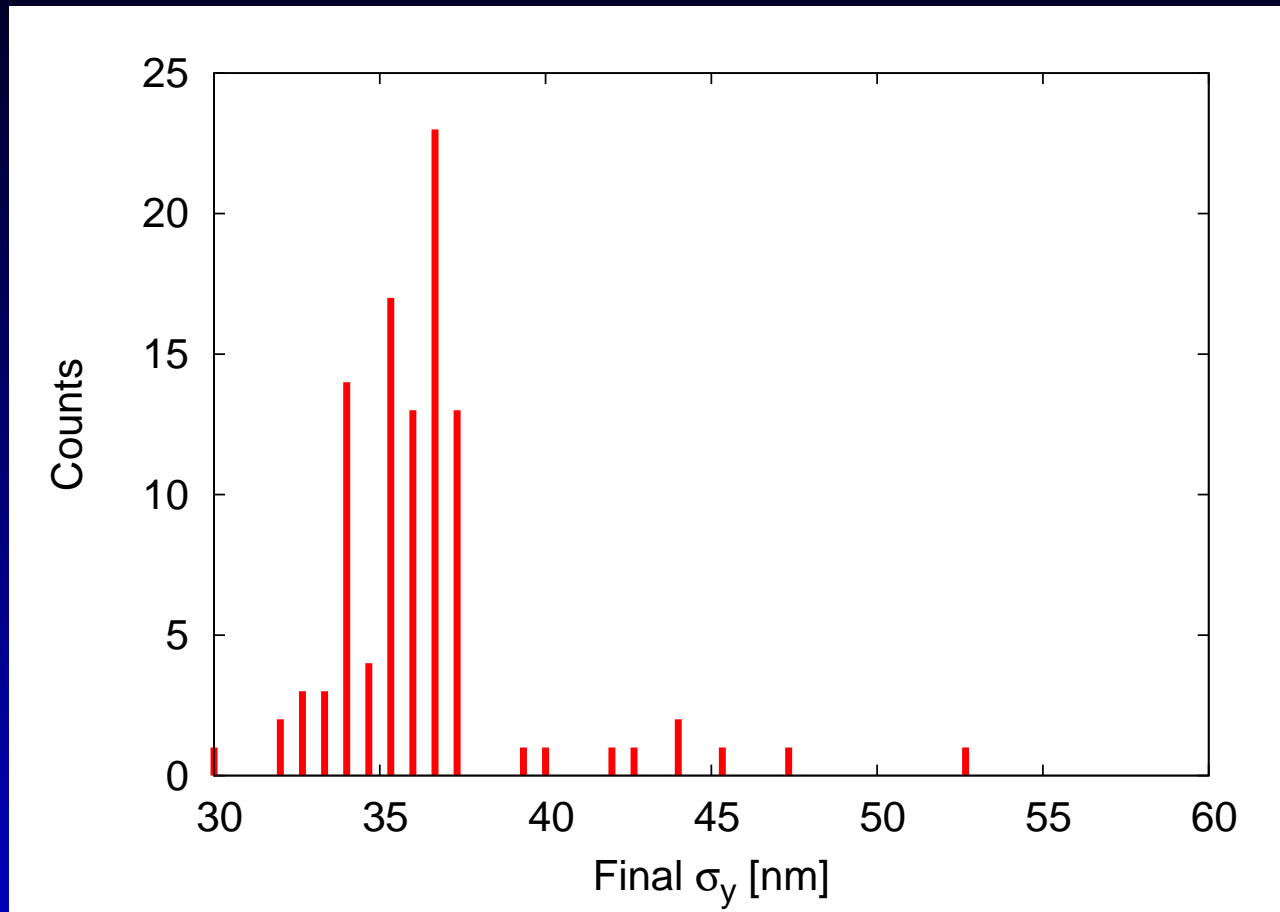


Final σ_y for $\beta_y=0.1\text{mm}$



Final σ_y between 37 and 44nm.

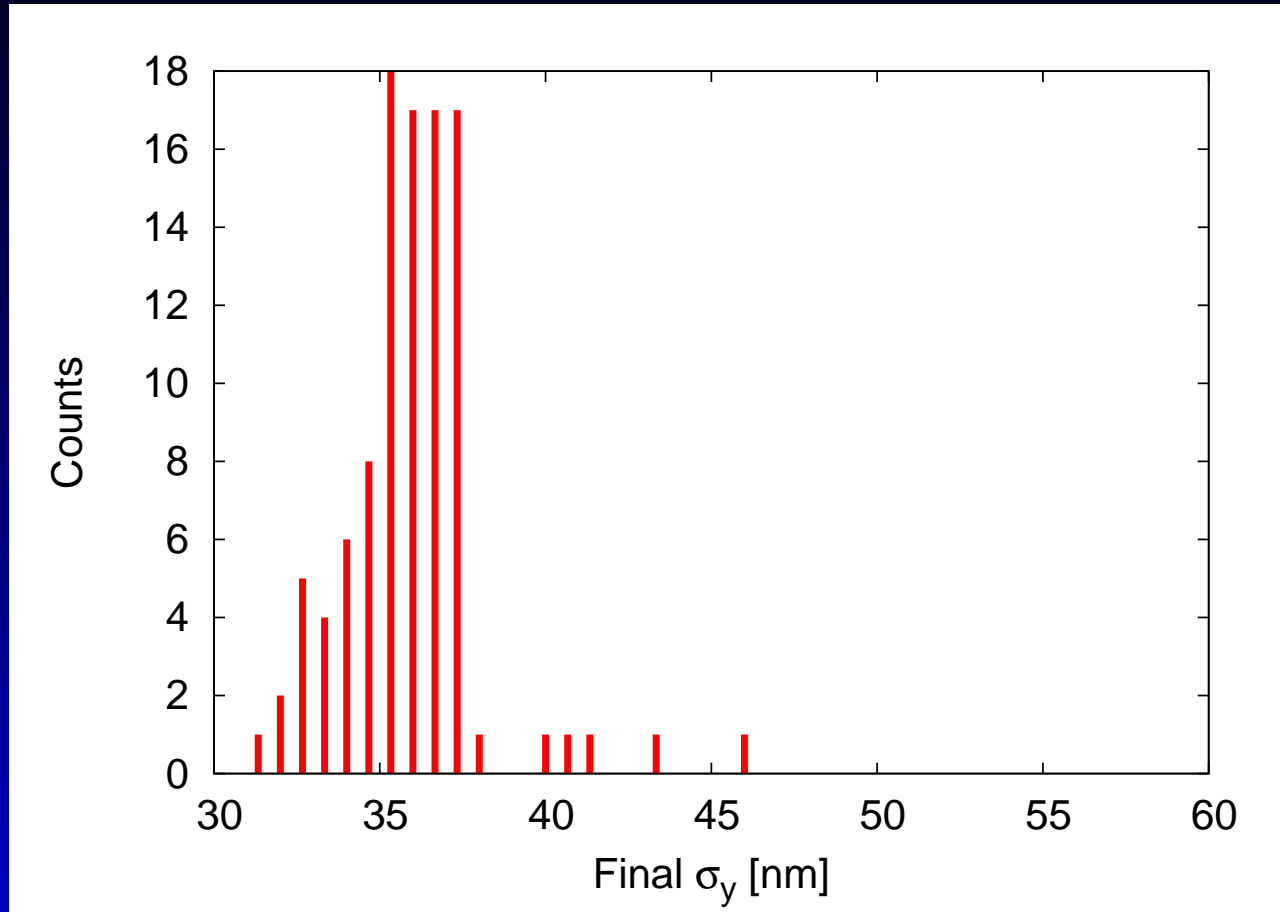
Final σ_y for $\beta_y=0.05\text{mm}$



Some seeds fail to finish between 30 and 37nm and one seed even stops at 53nm!!

More sophisticated tuning algorithms are required for lower β ! \rightarrow Same problem as in CLIC

Final σ_y for $\beta_y=0.025\text{mm}$



Reducing the beta did not help for the **rms!** → must use Gaussian fit to the core in the algorithm...