

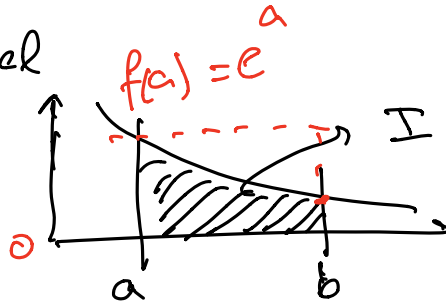
- Exam dates
- path; env. variables
- histogram vs. graph.

26/1 9/2

Histogram vs Graph

variable x (measurement)

example $x \equiv \text{residual}$



2 methods

1/ analytical.

I_1

2/ numerical (MC)

I_2

$$x =: I_2 - I_1$$

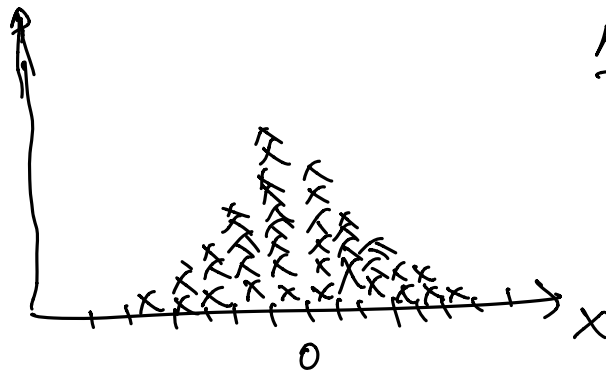
1 value for I_1 (exact integral)

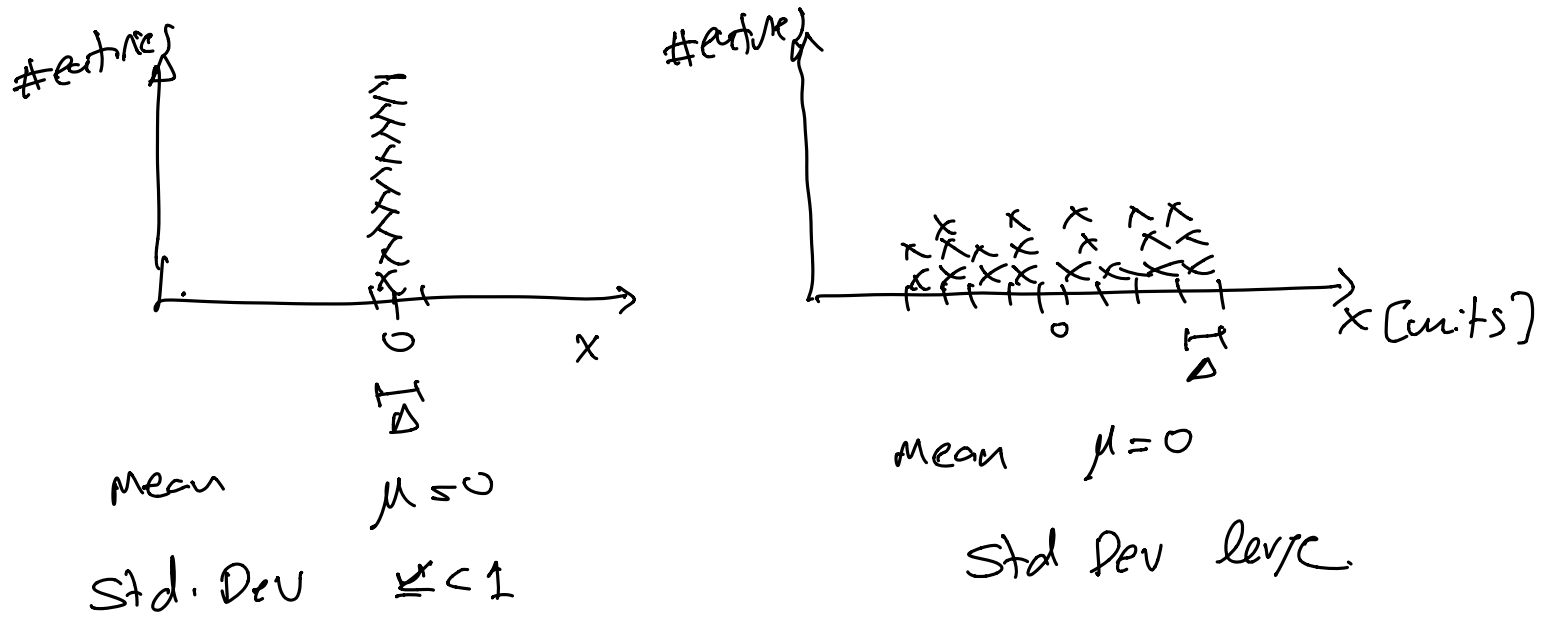
N values for I_2 (N number of sampling points)

N values of x : $\{x_i\}$ $x_i = I_2^i - I_1$

\neq centres

1D Histogram of x





THIF data Root Br 1D Histograms

Graph

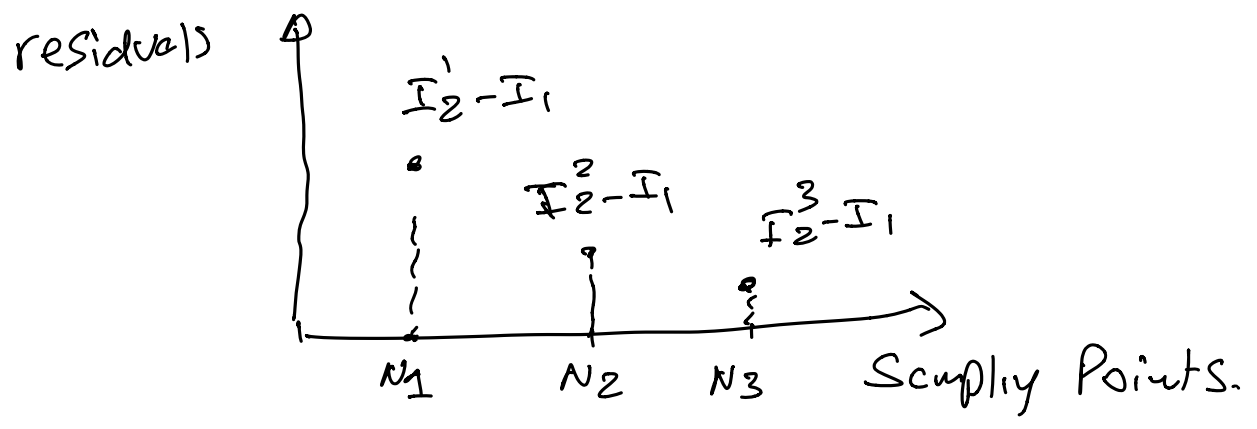
You show/plot y a function of x

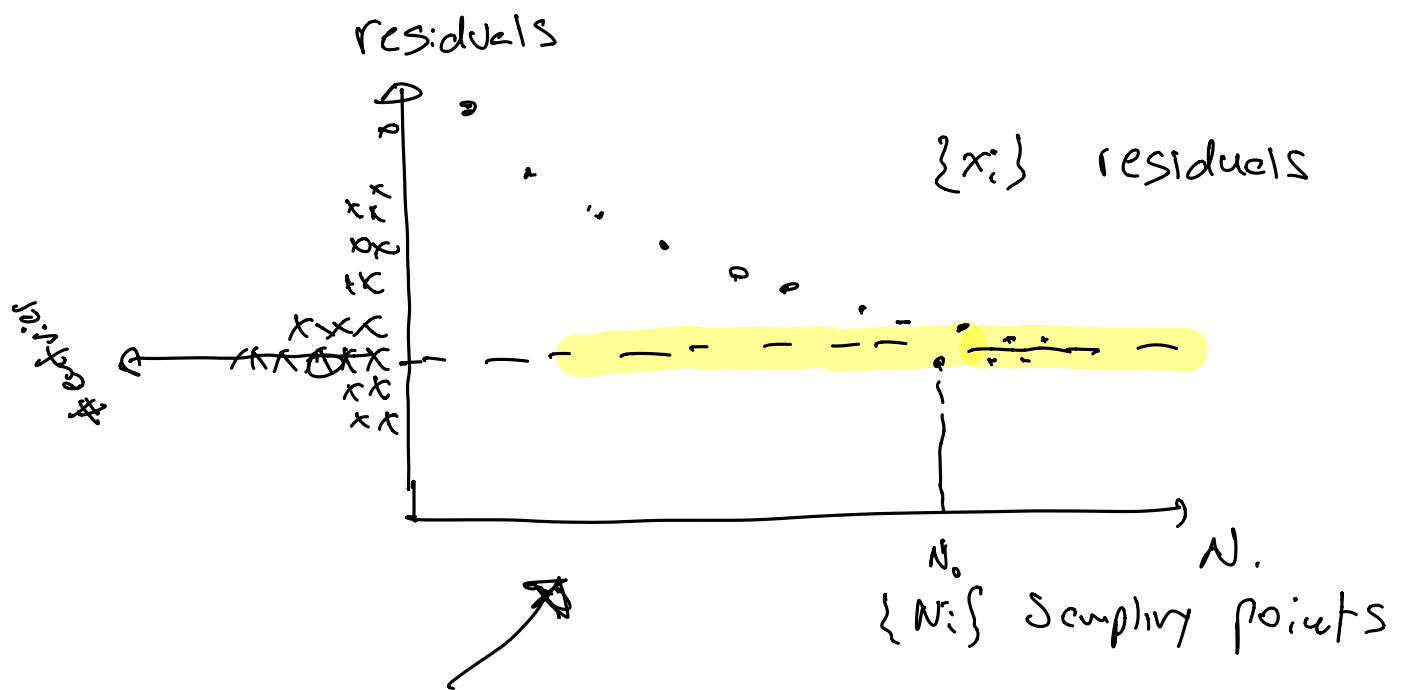
↓
parameter
measurement
variable

param.
meas.
variable.

$\{x_i\} = I_2^i - I_1$ residuals

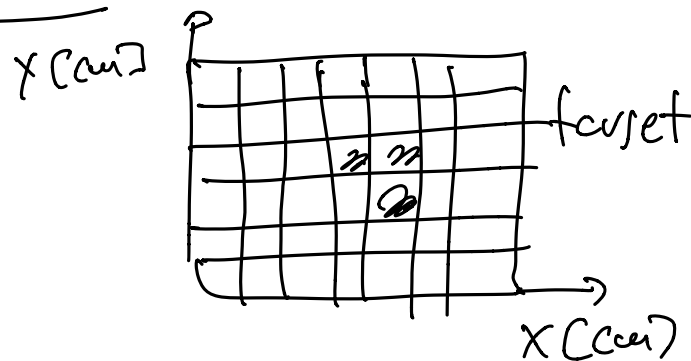
$\{N_i\} = \{40, 100, 1000, \dots, 10^7\}$ Sampling points





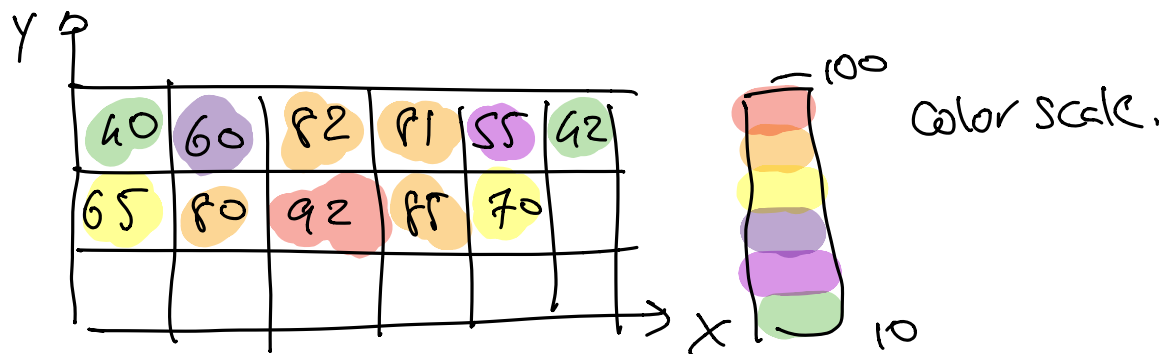
TGrep Class in ROOT

2D histogram

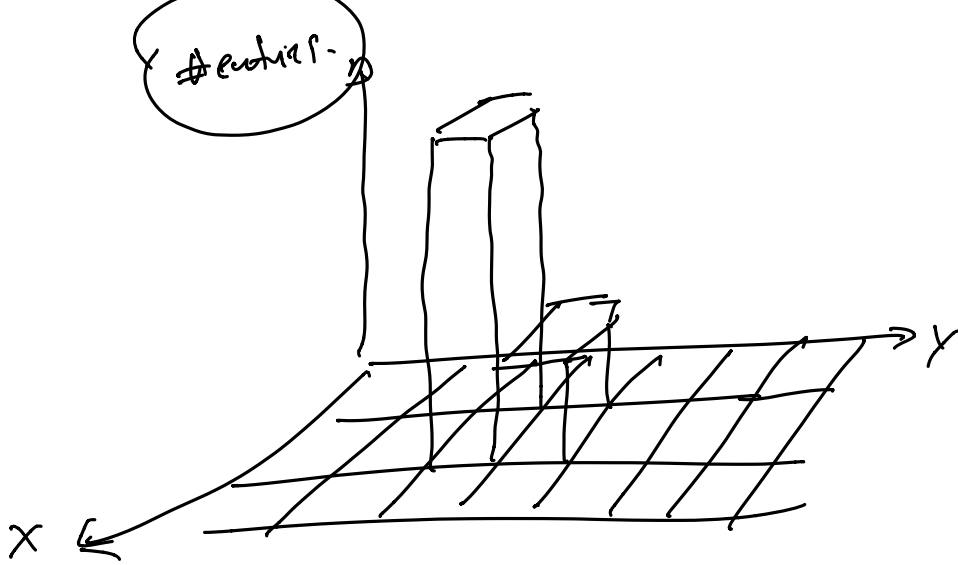


2D histogram with T2HF Class in ROOT

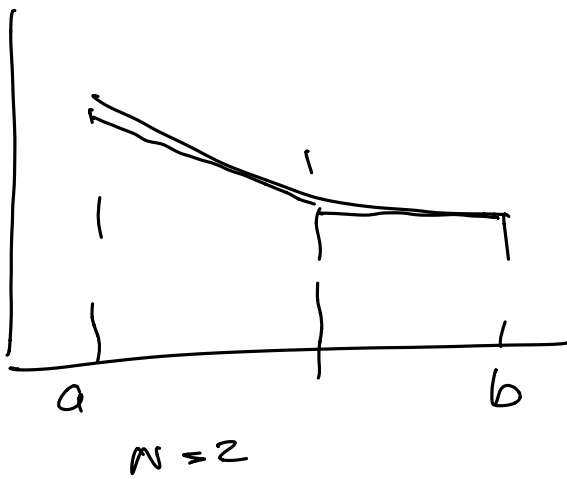
$\{x_i, y_i\}$ # entries



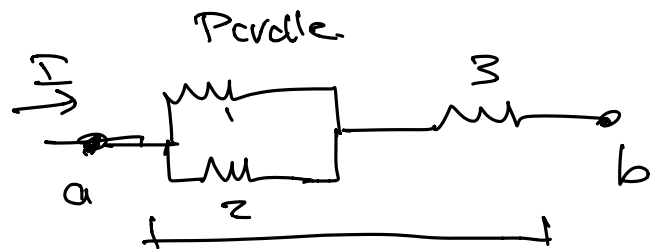
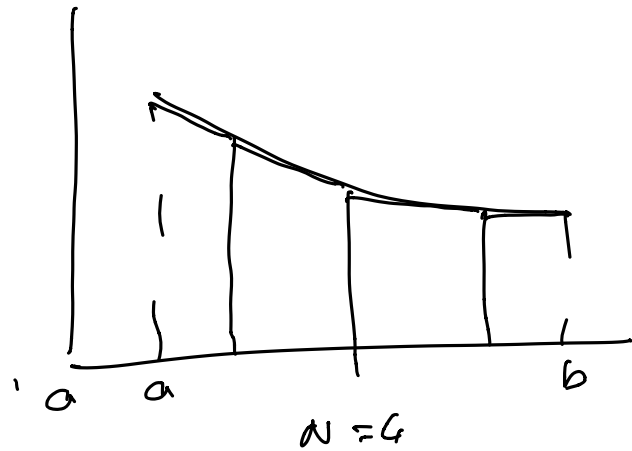
LEGO Plot



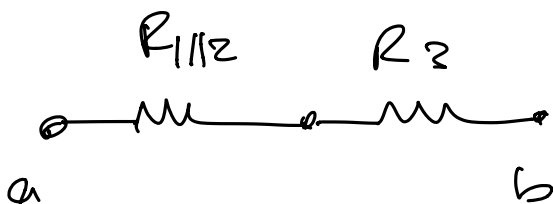
Midpoint



Midpoint



$$V_{ab} =$$



$$DV_{ab} = I \cdot \underbrace{R_{1//2+3}}$$

$$H \rightarrow \gamma \gamma$$

$$H \rightarrow \gamma Z \rightarrow e^+ e^-$$

γ : Simple particle

$$\underline{P}_\gamma^Z = \underline{P}_{e^+} + \underline{P}_{e^-}$$

Z : Composite

$$m_{inv}^2 = (\underline{P}_\gamma^Z + \underline{P}_\gamma^Z)^2$$

\hookrightarrow Lorentz vector (E, \vec{P})

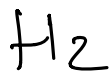
$$m_{inv}^2 = E_\gamma^2 - |\vec{P}_\gamma|^2$$

$$m_{inv}^2 = E_H^2 - |\vec{P}_H|^2$$

$$\underline{P}_H = \underline{P}_\gamma + \underline{P}_Z = \underline{P}_\gamma + (\underline{P}_{e^+} + \underline{P}_{e^-})$$

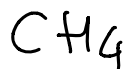
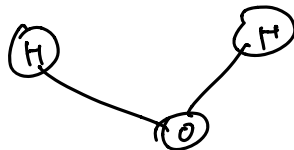
Molecule

Aggregate/Composition of Atoms

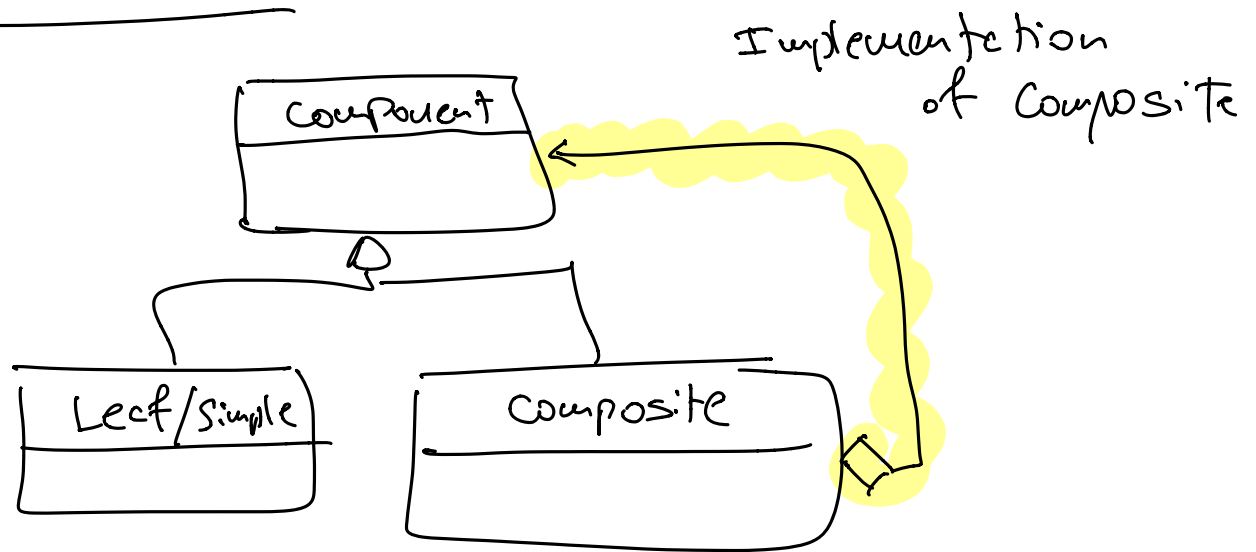


mass()

Z()



Composite Pattern



Registrar / Parallel, Series

Planet
Star

solar system

Particle

Unstable particle

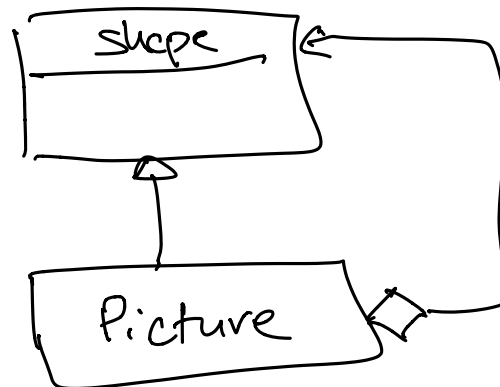
Shape

Picture

Atom

Molecule

Picture Shape



3 Shapes

Rectangle, Triangle
Circle

