Pulse separation characteristic based on their approximation

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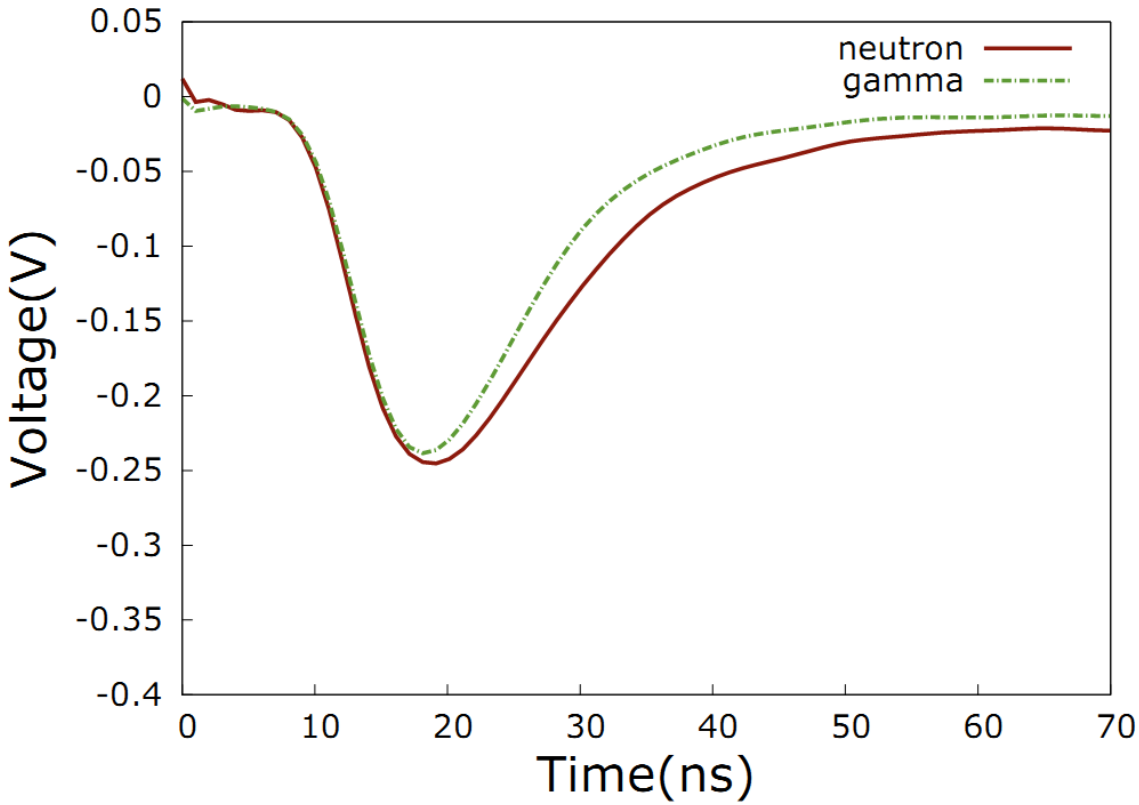
Motivation

- Impulses from detector
- Matematical model
- Digital spectrometric detection

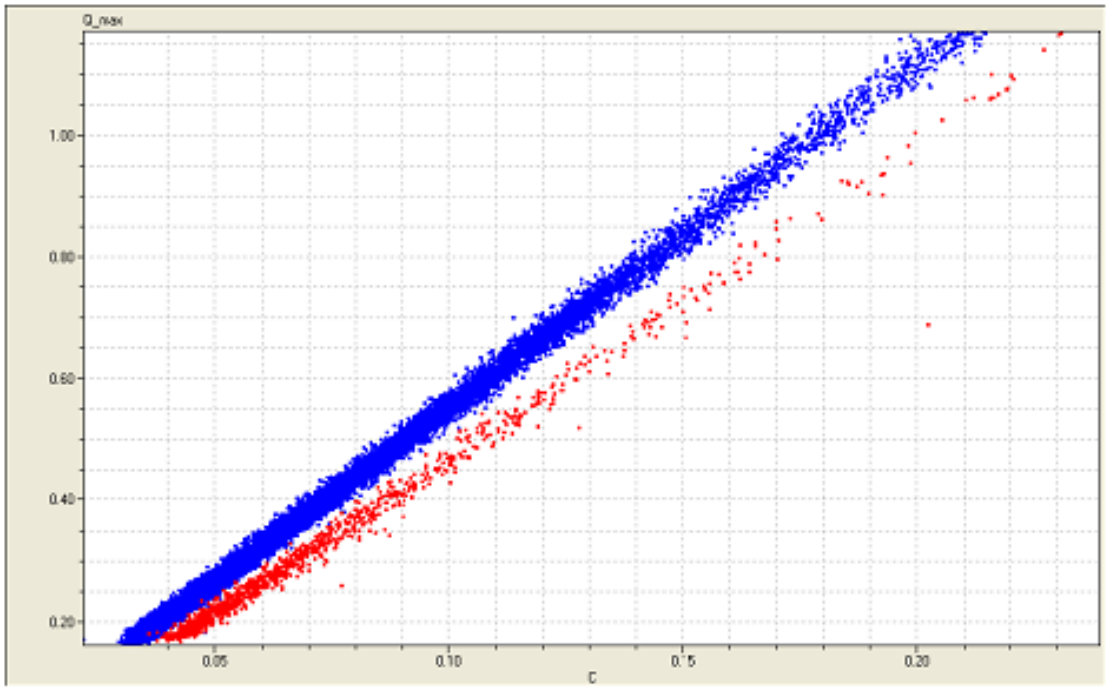


Mathematical model

- $\phi(t) = \sum_{k=0}^{n} c_f P_k; t = 0, 1, ..N$
- $P_0(t) = 1$
- $P_1(t) = 1 - 2\frac{t}{N}$
- $P_k(t) = \frac{2(2k-1)}{k(N-k+1)}(\frac{N}{2} - t)P_{k-1}(t) - \frac{(k-1)(N+k)}{k(n-K+1)}P_{k-2}(t)$
  $k = 2, 3, ...n$

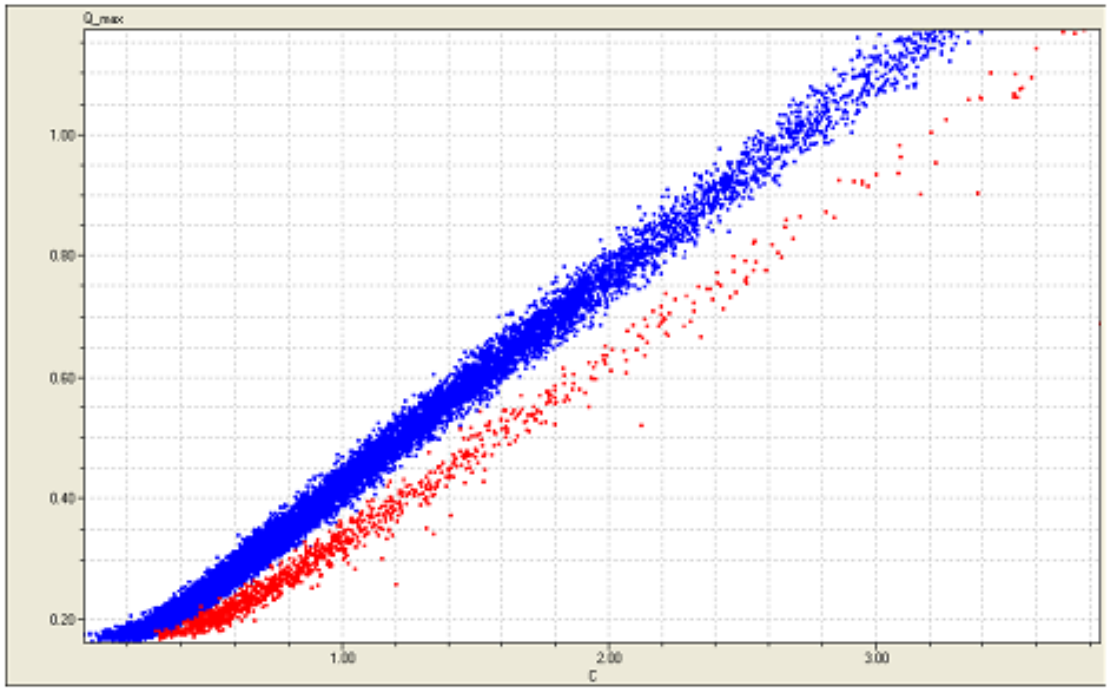
Coeficient c_0

- $C = c_0$



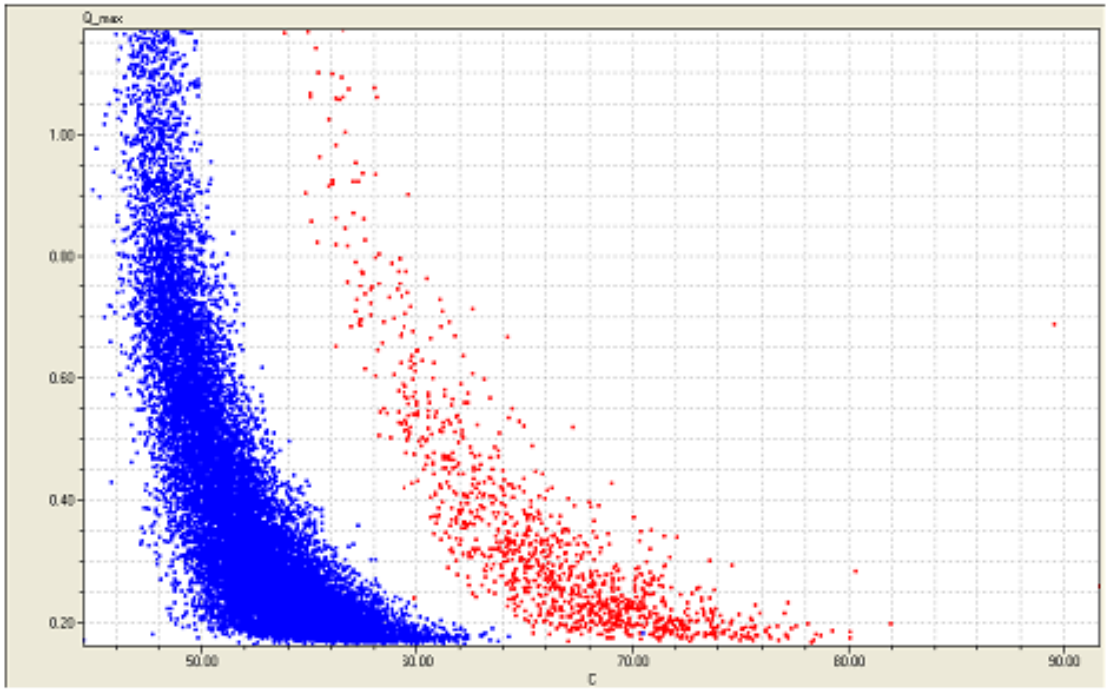
Coeficient c_0 and c_2

- $C = 10(c_0 - c_2)$



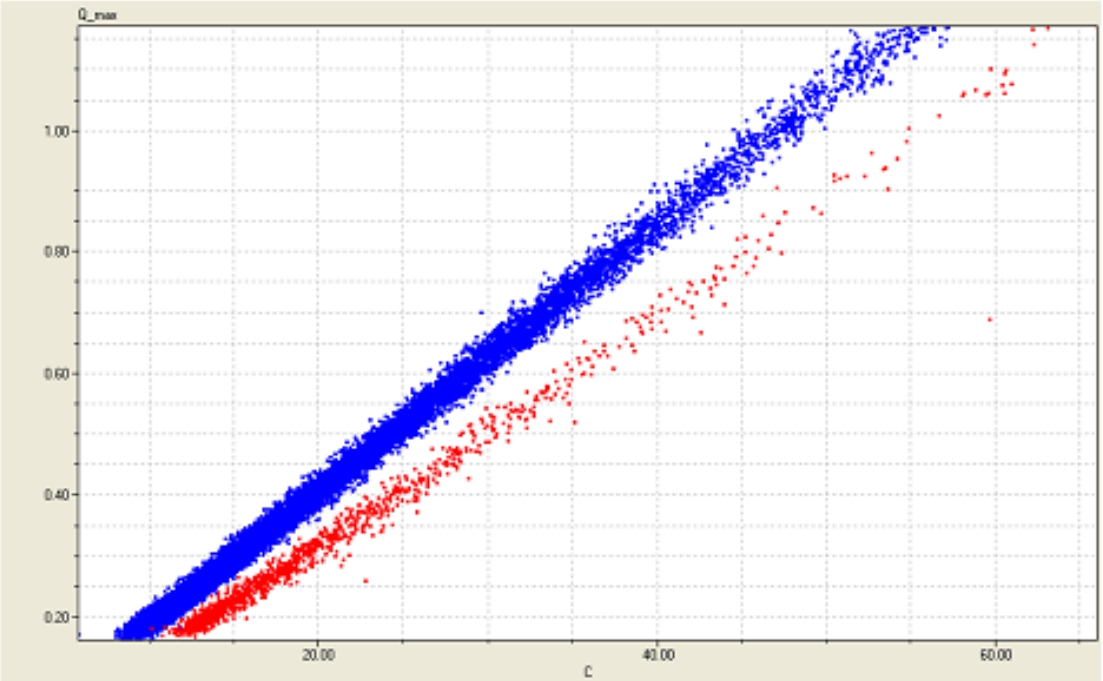
Leading edge app. integral and maxima app. of the pulse

- $C_1 = \frac{1}{\phi_{max}} \int_{t_{\phi max}}^{t_{kon}} \phi(t)dt$



Itegral from app. of the leading edge

- $C_1 = \int_{t_{\phi max}}^{t_{kon}} \phi(t)dt$



Conclusion

- Usefull for FPGA
- ON-LINE separation

Thank you for your attention