

NOISE

- What is noise ?
(without speaking about pile-up)
- tsim_l1cal2b
- ADF simulation
- Signal processing (thermal noise)

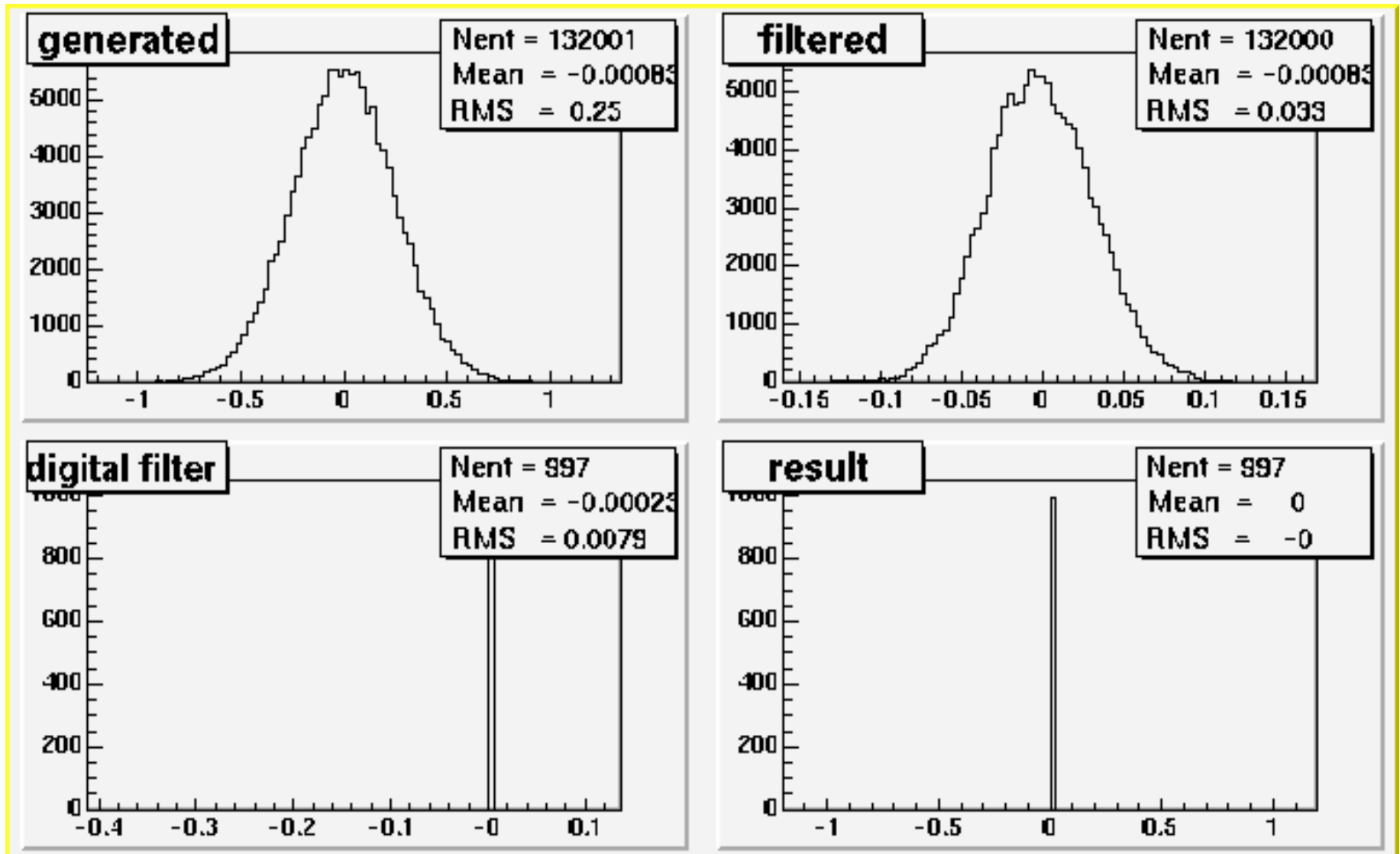
tsim_l1cal2b

- **ad hoc noise** added to each trigger tower (input to TAB)
- Jovan's conclusions are based on that

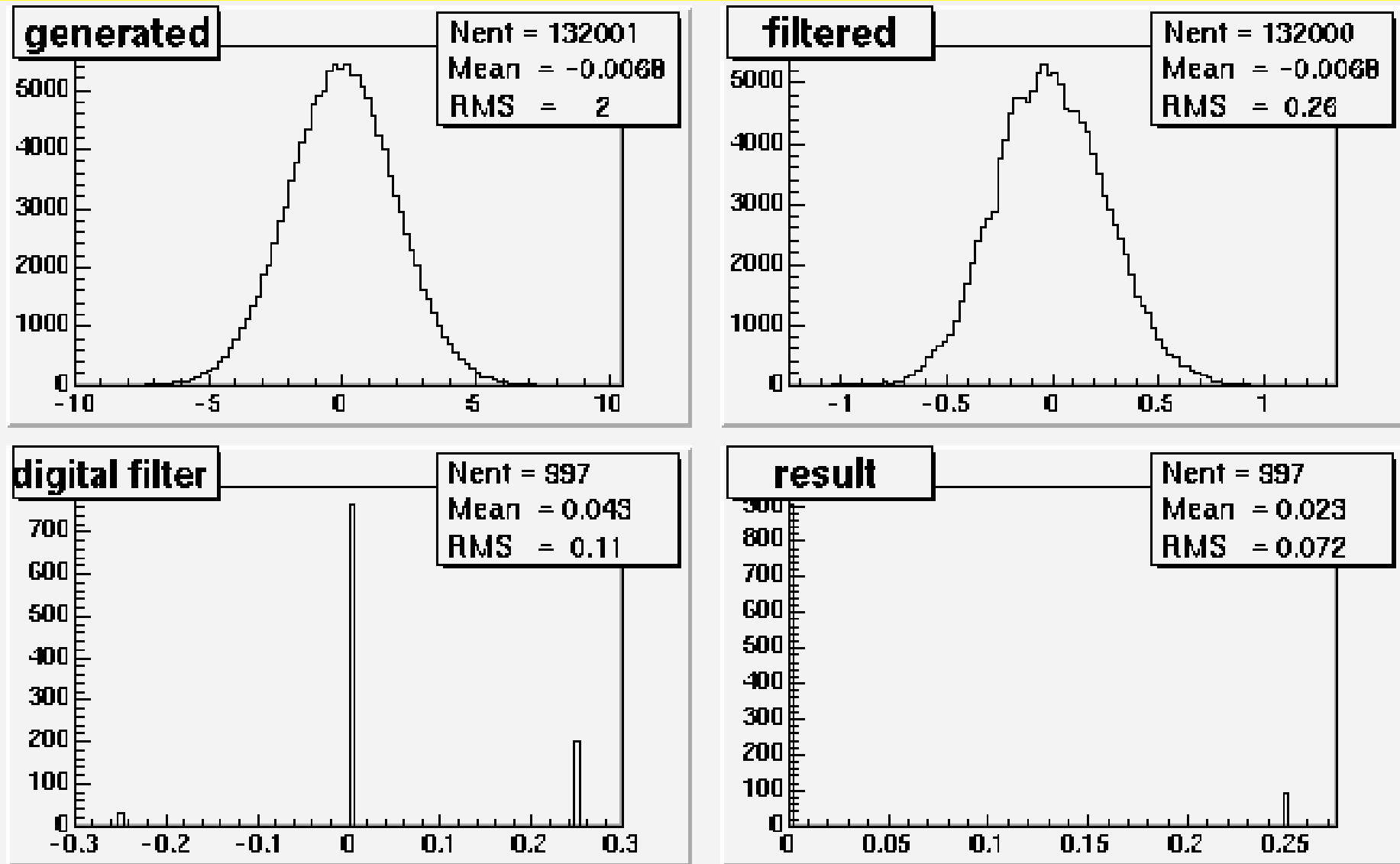
ADF simulation

- “white” noise added every ns to the generated puls
- suppressed by analog filter by a factor of 8
- not much of it left at the end

$\langle 0.25 \text{ GeV} \rangle / \text{ns}$ propagated through ADF



$\langle 2 \text{ GeV} \rangle / \text{ns}$ propagated through ADF



Thermal noise

- W.E.Cleland, E.G.Stern: Signal processing...
NIM A 338 (1994) 467 – 497
- Gaussian amplitude distribution
- Poisson distribution to find number of pulses
in each BC
- Multiplied by $h'(t)$
($h(t)$ is the impulse response)

Questions

- add random values at some t and where ?
 - to the generated pulse
 - after the analog filter
 - to the ADC samples
- which amplitude ?
- propagate using an impuls response or not ?
(and which impuls response)
- information from zero-bias trigger ?