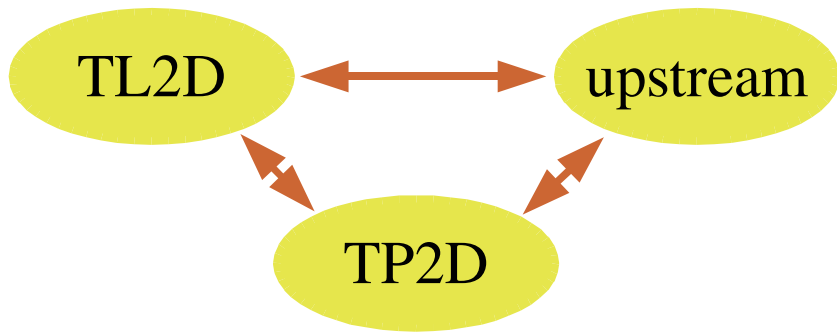


# PulsarMon and L2 Cluster

Vadim Rusu



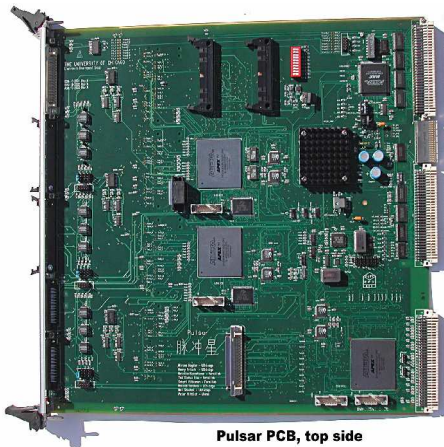
# What do we want

## The Dream Monitoring System:



Coffee is ready. BTW, board A, channel B, resistor C should be replaced

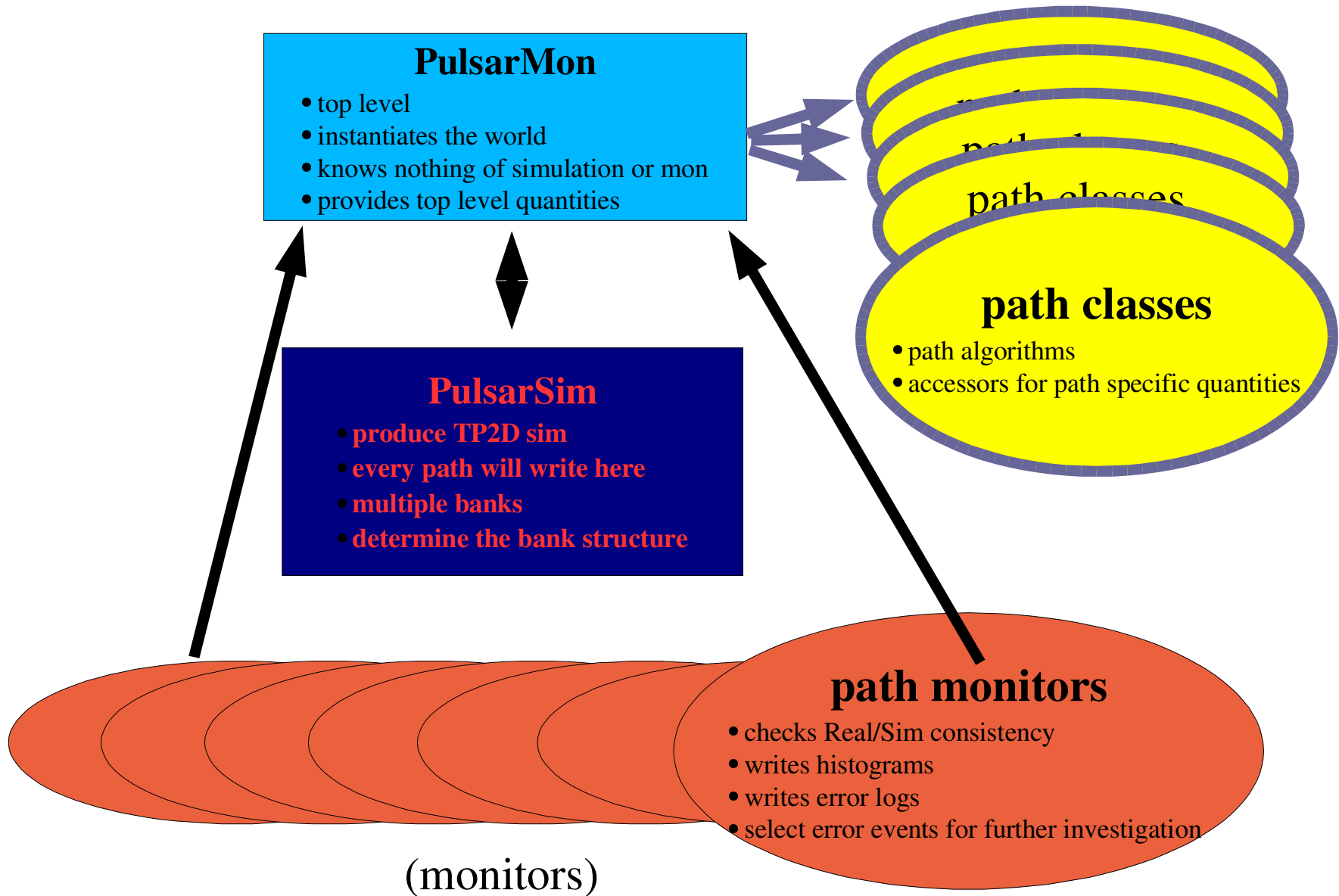
- modularity
- integrability
- easy to use



Pulsar PCB, top side

- **Check data as presented to the Pulsar input**
  - compare the input Pulsar data to upstream readout
    - ➔ Example: TP2D (input DAQ Pulsar) compared to TC2D (DCAS readout)
  - the result of the comparison is presented to the user as histograms and detailed error logs are printed for error events for expert inspection
  - for error events try to establish a correlation to a third party
    - ➔ Example: I have a bit error when comparing TC2D to TP2D. Is TP2D in agreement with TL2D?
  - we need to be capable of selecting several definitions of “upstream”
- **Internally check the data as processed by the Pulsar**
  - Input (could be DataIO or upstream) – Output (Control FPGA)
- **Check data as presented to the Pulsar output**
  - compare Pulsar output to TL2D

# Structural design



# So far ...

- PulsarMon version 1.0 in CVS
  - check it out
- PulsarSim provides framework for filling TP2D with individual path data
  - Wojtek and Daniel wrote useful accessors to the TP2D
- ClusterMonitor stable version, producing lots and lots of histograms and checks.

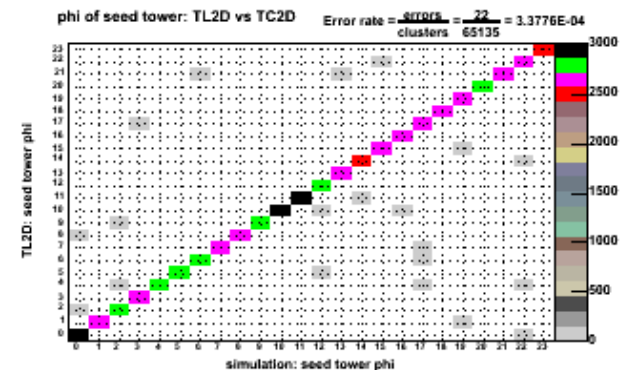
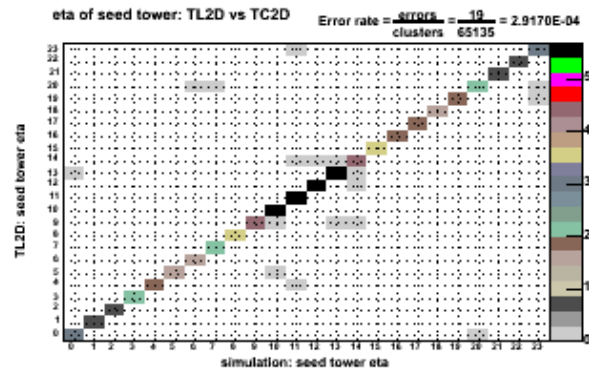
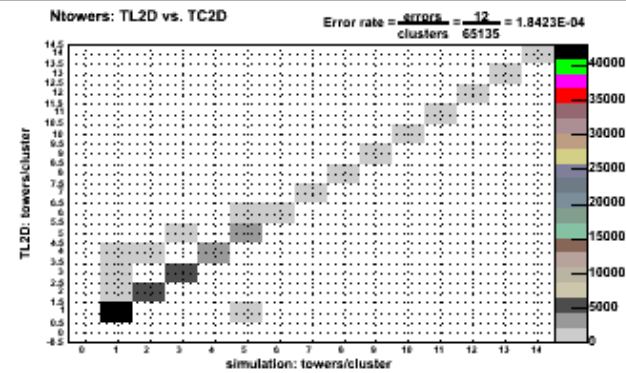
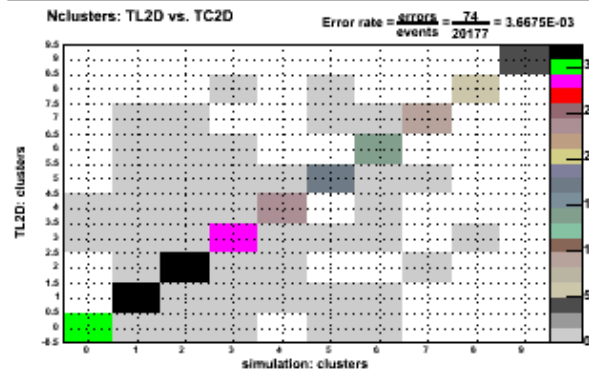
# ...To do

- Integrate other paths into the same framework
  - Recess exists on a standalone version
  - Muon/Merger started
- June 30'th – have all paths in as starting points
  - Uniform configuration
  - Offline running “daily”
- July 15'th – PulsarMon in trigger room
  - Change the base class to get a la TrigMon
  - Small interface changes
  - available prototype histograms for COs and experts
  - 2 weeks for tweaking
- July 30'th – ready for production

# Cluster Board Saga

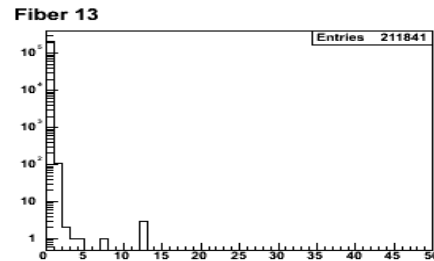
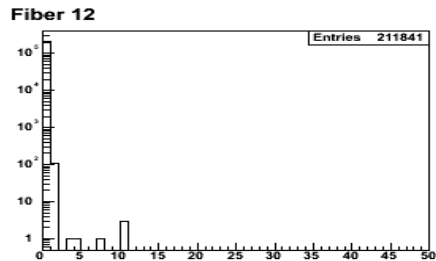
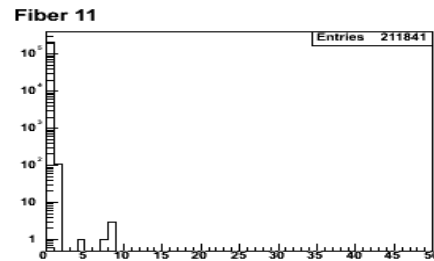
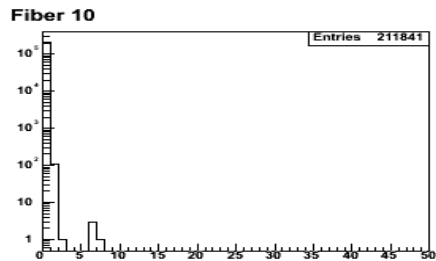
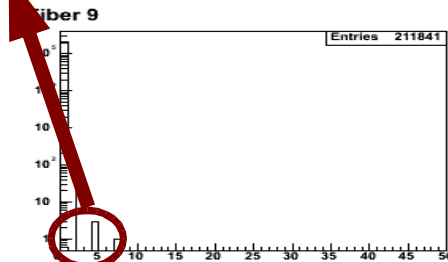
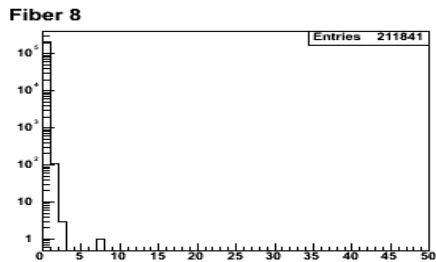
TrigMon #1 L2TriggerMonitor CLIST info word validation

Run:181959 Event: 1663811 # of Events:20177 Time: Mon May 24 14:16:39 2004

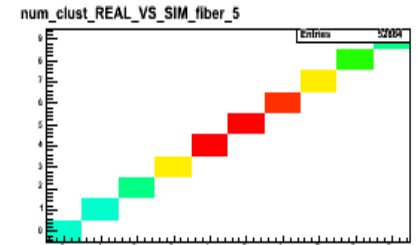
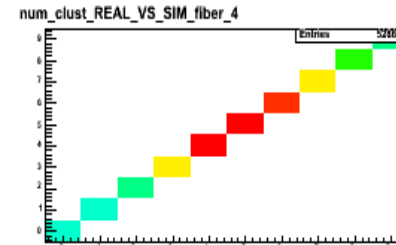
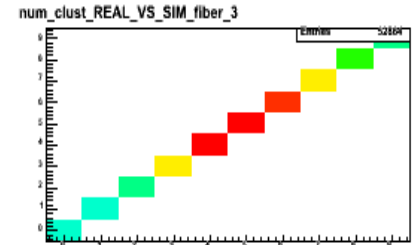
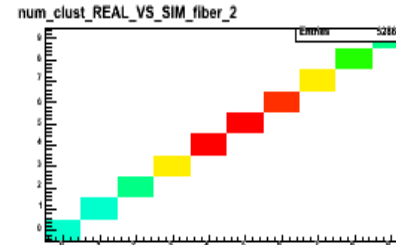
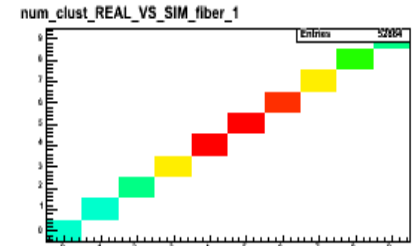
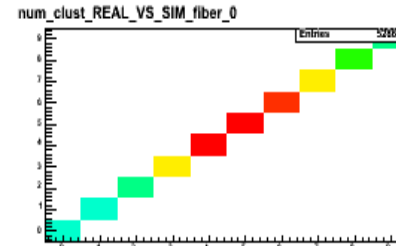


# Pulsar in CLIST mode

hhhhmmm!!!

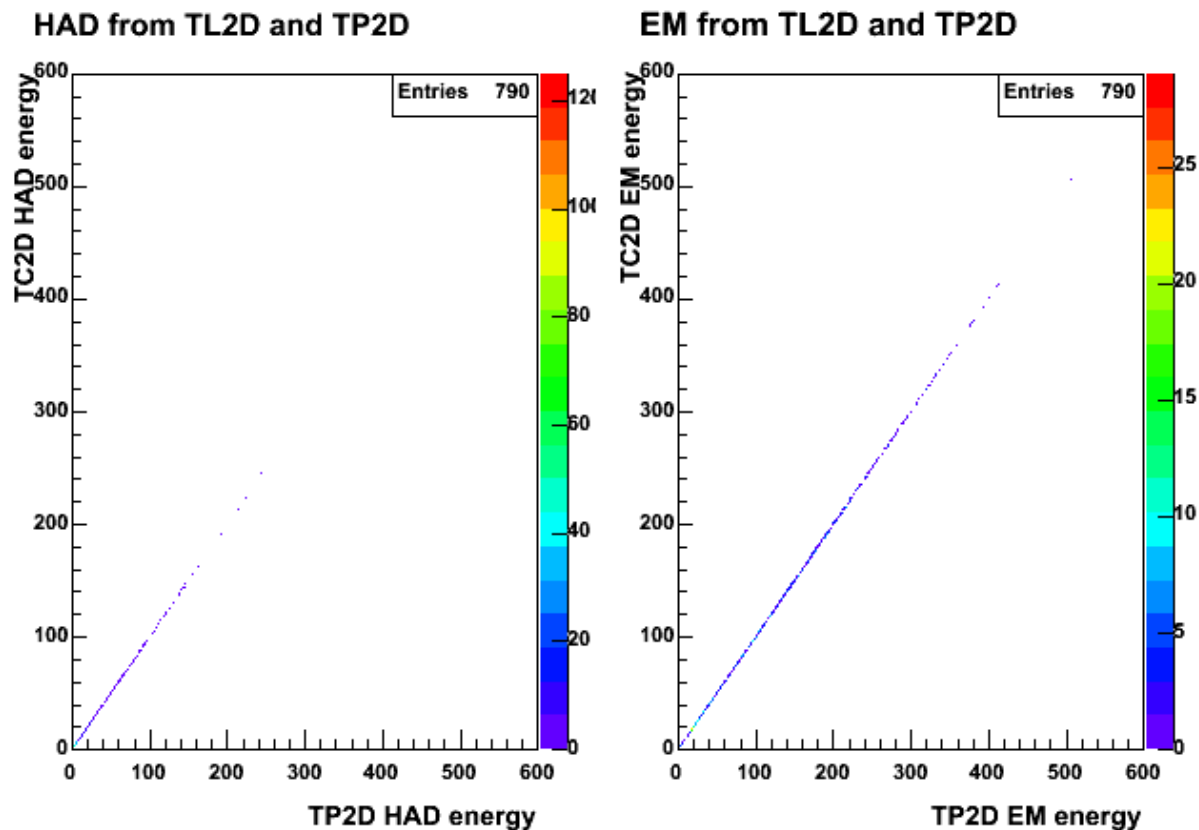


number of bit errors per event for each fiber



no problem here!

# PulsarMon comes to save the day

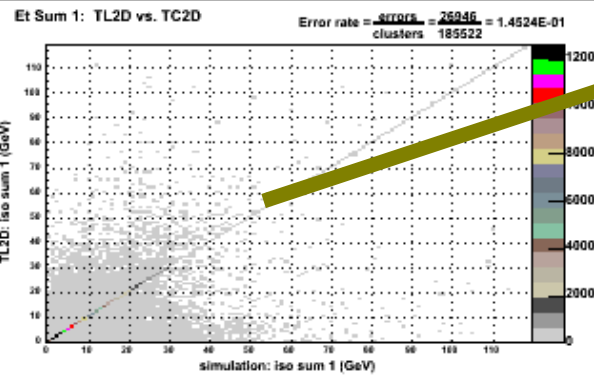
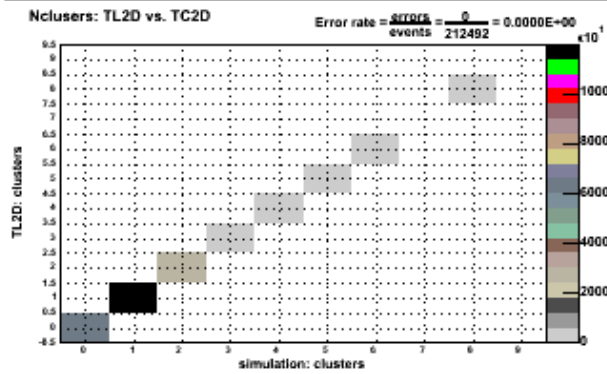


Pulsar receives the same data as the current Clist board  
Problem must be on LOCOS/CLIQUE

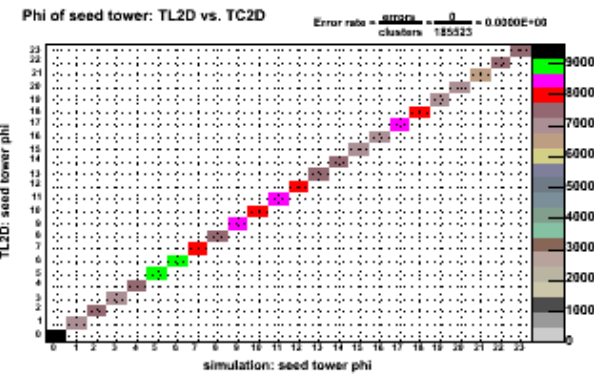
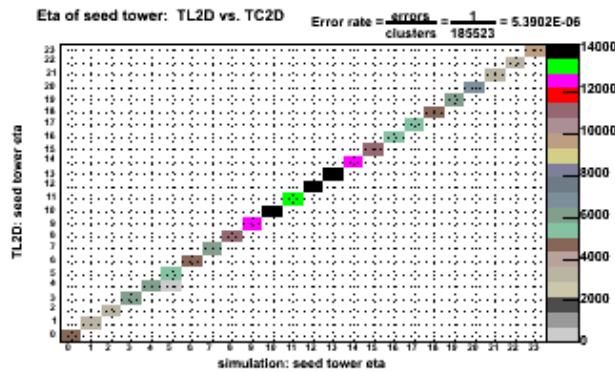
# ISOLIST

## TrigMon #8 L2TriggerMonitor 2.2.4: ISOLIST validation

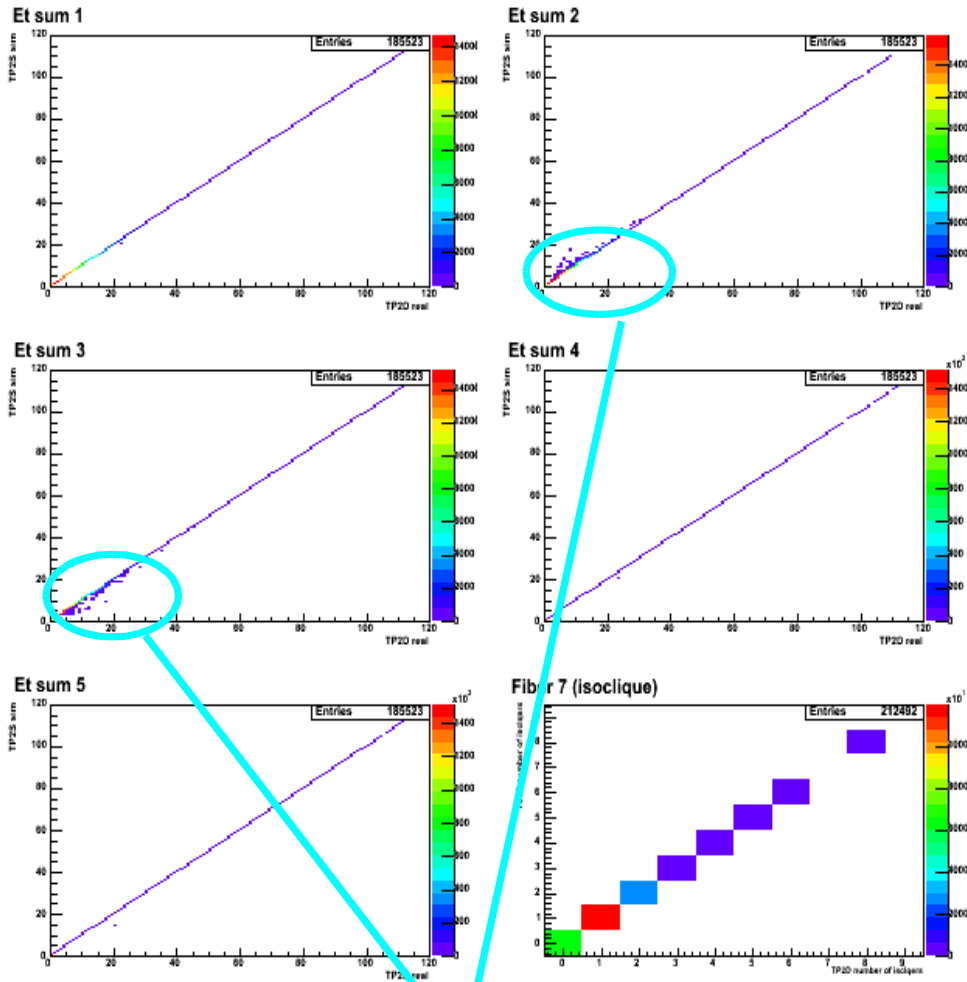
Run:182890 Event: 2831866 # of Events:212492 Time: Thu Jun 10 17:40:25 2004



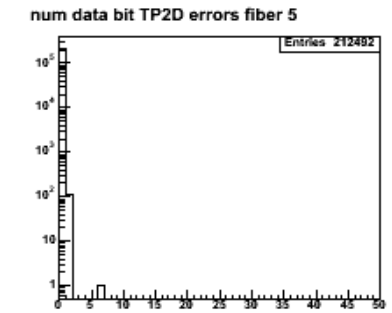
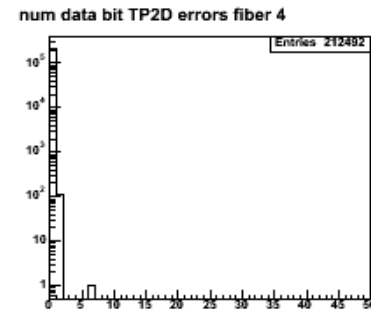
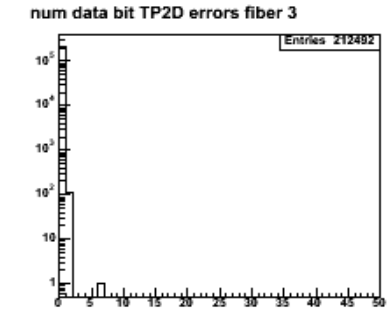
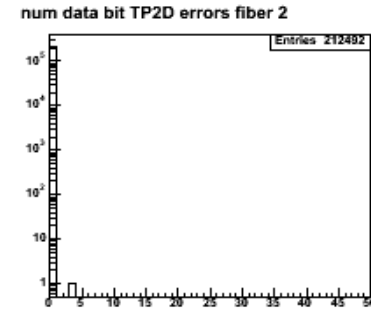
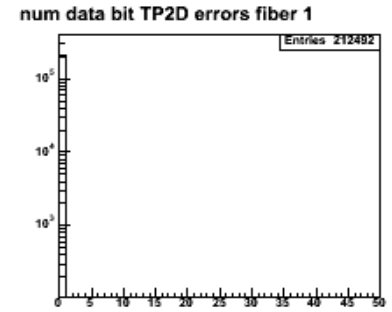
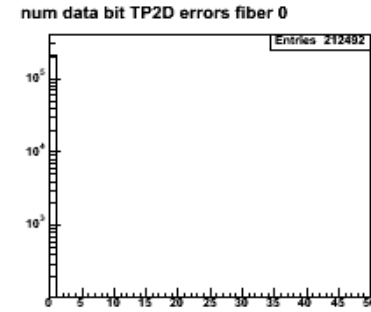
average rate  
~15%. Could go to  
100% instantaneous



# ...and Pulsar



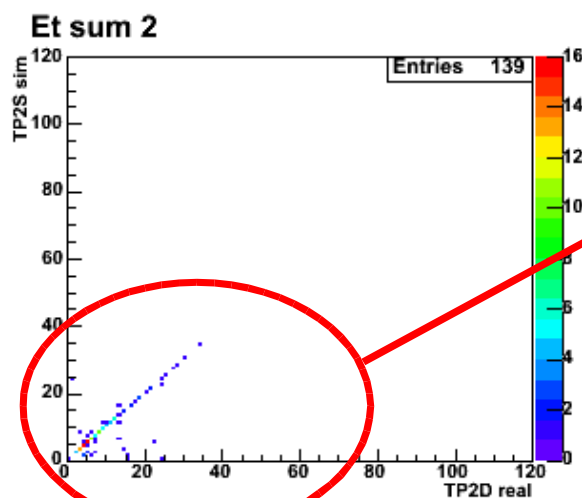
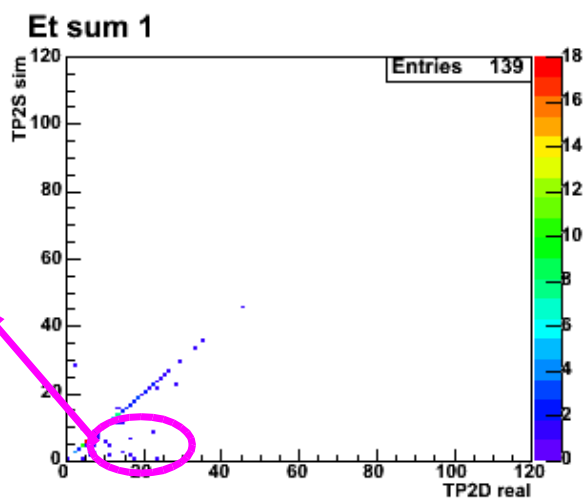
Et2/3 errors only



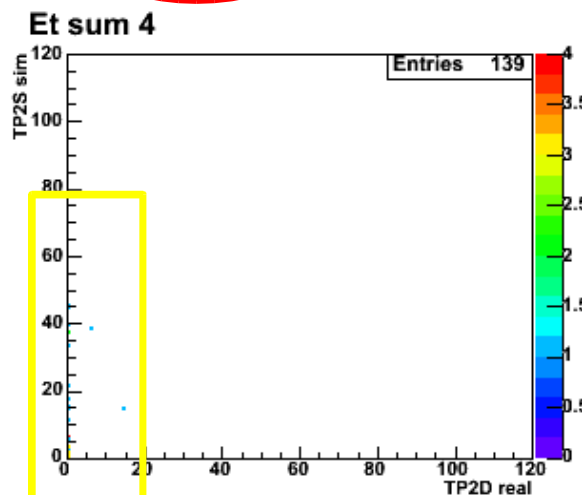
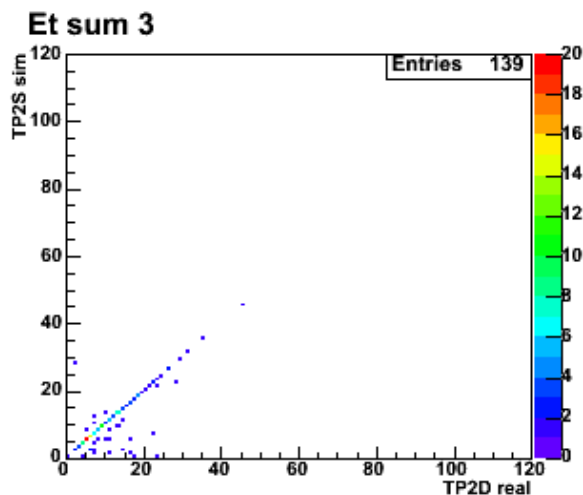
number of bit errors for each fiber  
- **problems only on 3/4/5**

# and again PulsarMon

some off-diagonals  
(could be that  
ISOPICKs  
and ISOLIST  
fail at the same  
time)



agreement  
mostly



et sum 4 has errors on  
every events

# Plan for integration

- CLIST algorithms and SLINK output under testing (June 16'th)
  - Firmware ready
  - Need VME software for teststand
  - Software for offline checking
- ISOLIST algorithms and SLINK output
  - Firmware, VME, software (June 30'th)
- Fine tuning of firmware (July 15'th)
  - Error checks, cleaning up, speeding up ...
- PulsarMon Cluster software (July 15'th)
  - more histograms for experts
  - bug squashing
- Month of July should be dedicated to beam tests
  - measure the PulsarCluster real error rate