

# CHEP09 after thoughts

Rene Brun

# CHEP09 and ROOT

- Conference was good for us
- ROOT is now in all HENP experiments
- SuperBelle and HSC moving to ROOT
- FAIR: new large experiments
- Many reports about PROOF
- Last CHEP talking about GRIDs ?
- Hopes in virtualization

# Introduction

- **SuperKEKB**

- In KEK, Tsukuba, Japan
- Observation of CPV in B-meson decay in  $e^+e^-$  collision
- Better understanding of CPV phenomena
- Upgrade Belle experiment
  - Much larger data than Belle
    - Luminosity:  $\sim 10^{36} \text{cm}^{-2}\text{s}^{-1}$
    - 50 billion BB-bar pair ( $50 \text{ab}^{-1}$ )
    - $\sim 250 \text{KB}$  / event,  $2 \text{GB}$  / sec.



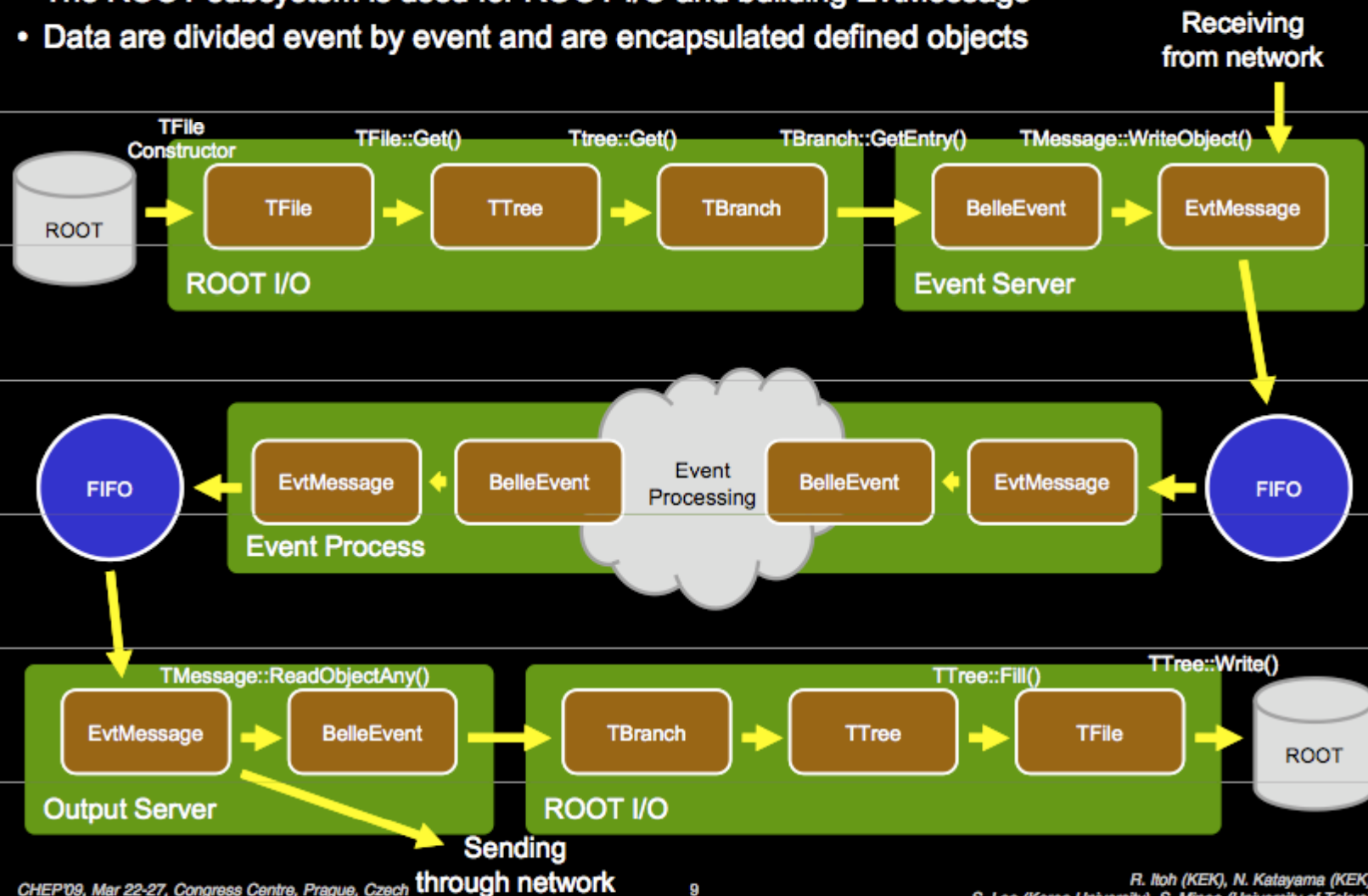
- **HSC (Hyper Suprime-Cam)**

- Subaru telescope, Hawaii, USA
- Search for Dark energy
- Next generation CCD camera for Subaru telescope
- Take the place of SC (Suprime-Cam) in 2011
- 110 CCDs arranged in grid
- 1 shot / 5 min. (including exposure time),  $1.5 \text{GB}$  / shot ( $880 \text{M}$  pixels)
  - $1.5 \text{GB}$  data for every 5 minutes
  - Data should be processed in 20 seconds to determine next exposure



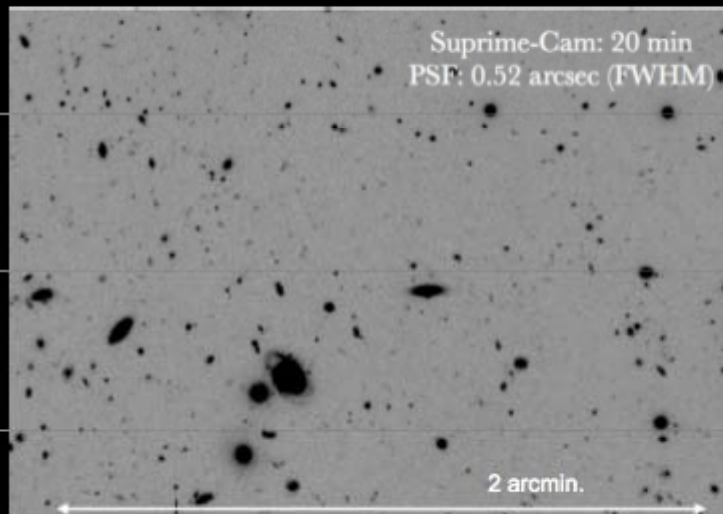
# Object-oriented Data Flow in SMP

- The ROOT subsystem is used for ROOT I/O and building EvtMessage
- Data are divided event by event and are encapsulated defined objects



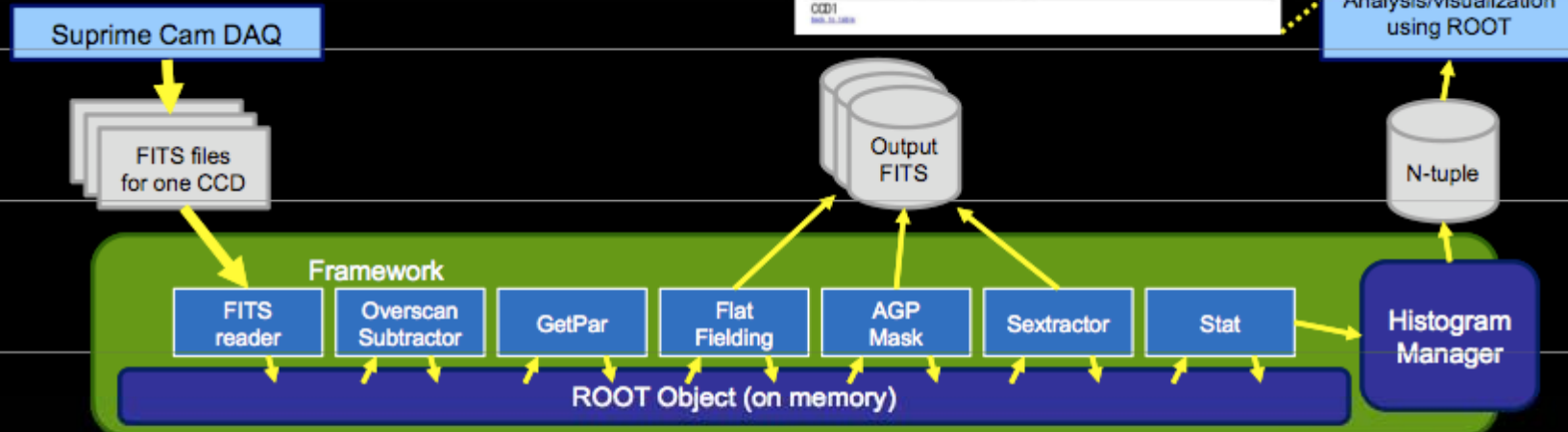
# Functionality Test in SC (Suprime-Cam)

- The framework is combined with HSC modules and the functionalities are tested



WEB

Analysis/visualization using ROOT



# CHEP09 and //

- Excellent report by Mohammad Al Turany (GSI) about the use of gpus in fairroot
- We should invite him for a few days.
- Merging many large output files is the bottleneck. What is the point in gaining a factor 100 for 1 minute if it takes 2 hours to merge the result?

# Performance, size, diagnostics

- Good report by CMS (Lassi, Giulo)
- ROOT contributes to memory fragmentation in I/O and dictionaries
- Must implement memory pools for Tree branches (work started by Leo)
- Must reduce size of dictionaries (dict.root)
- Must improve QA for installation (eg ubuntu/gcc4.4, macosx/fink)

# GUIs

- Not a fight anymore
- Qt fans silence (except J.Hrivnac)
- We do not make enough propaganda for the big advantages of the ROOT GUI
- Event recorder
- CRTL/S code generator
- New context menu help in html
- Easy to run with scripts
- Show our best examples



# LLVM

- Very nice presentation by Axel
- Many people interested

# Mathlibs

- No controversy anymore
- RooStats very well received
- Better doc, structure explained

# JAS

- JAS is dead, not maintained anymore
- Tony willing to cooperate with us (see next)

# Request from KEK

- They would like a web front-end such that one can run ROOT on a remote machine and display the graphics + GUI on the web server.
- They could provide one FTE
- For graph2d: solution->implement the TPad::Paintxxx functions as objects transferred as a super object. On the web server side a javascript can render these objects

# Bjarne Stroustrup visit

I am working for the Library. In the framework of the IT Book Fair we are going to organize at CERN on Sep. 3rd-4th, we planned to organize a talk with a renowned IT speaker. We invited therefore B. Stroustrup, who agreed in principle to come and asked me, as you can read, to put him in contact with you. We would like to organize a talk (exact title to be defined) on Thursday 3rd at 4pm in the Main Auditorium.

I hope the dates of this possible visit fit into your agenda. I let you take the lead and discuss with Mr. Stroustrup <bs@cs.tamu.edu> any plans you would have for his CERN visit. On our side, we will take care of the logistics (flight and accommodation).

Best regards,

Tullio Basaglia