

# From LHC collisions to physics



# The LHC at CERN: magnets, cavities and caverns



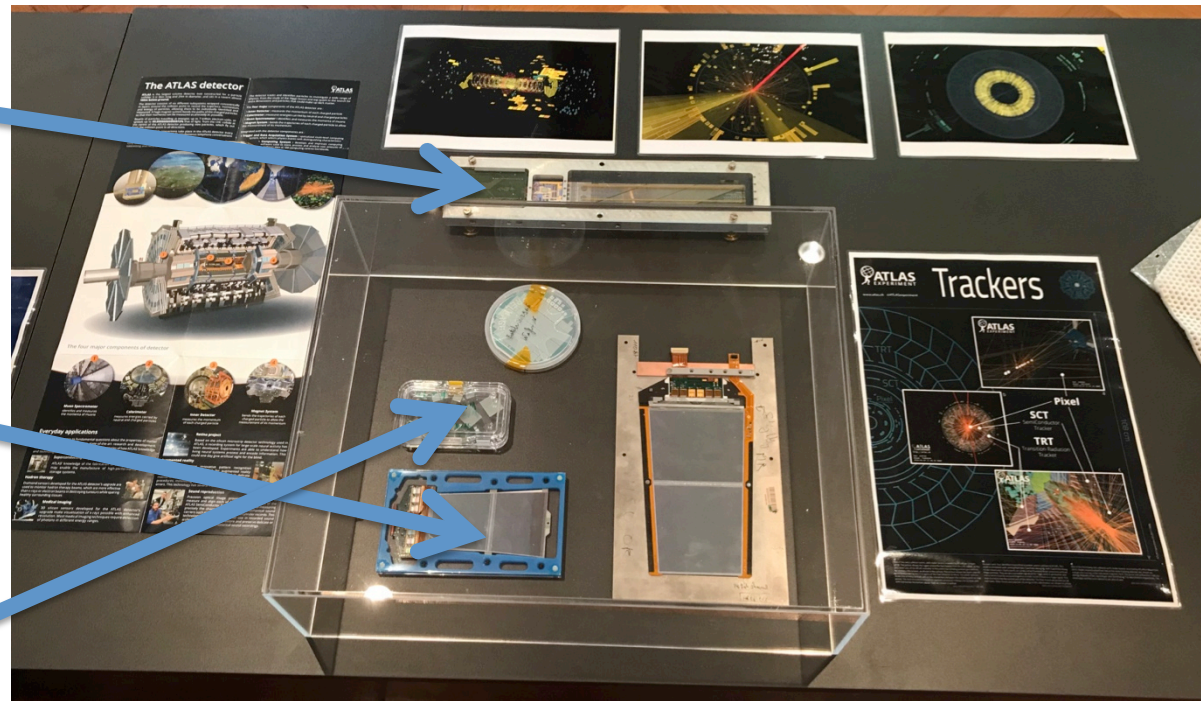


# Are detectors cameras ? Silicon Tracking Detectors

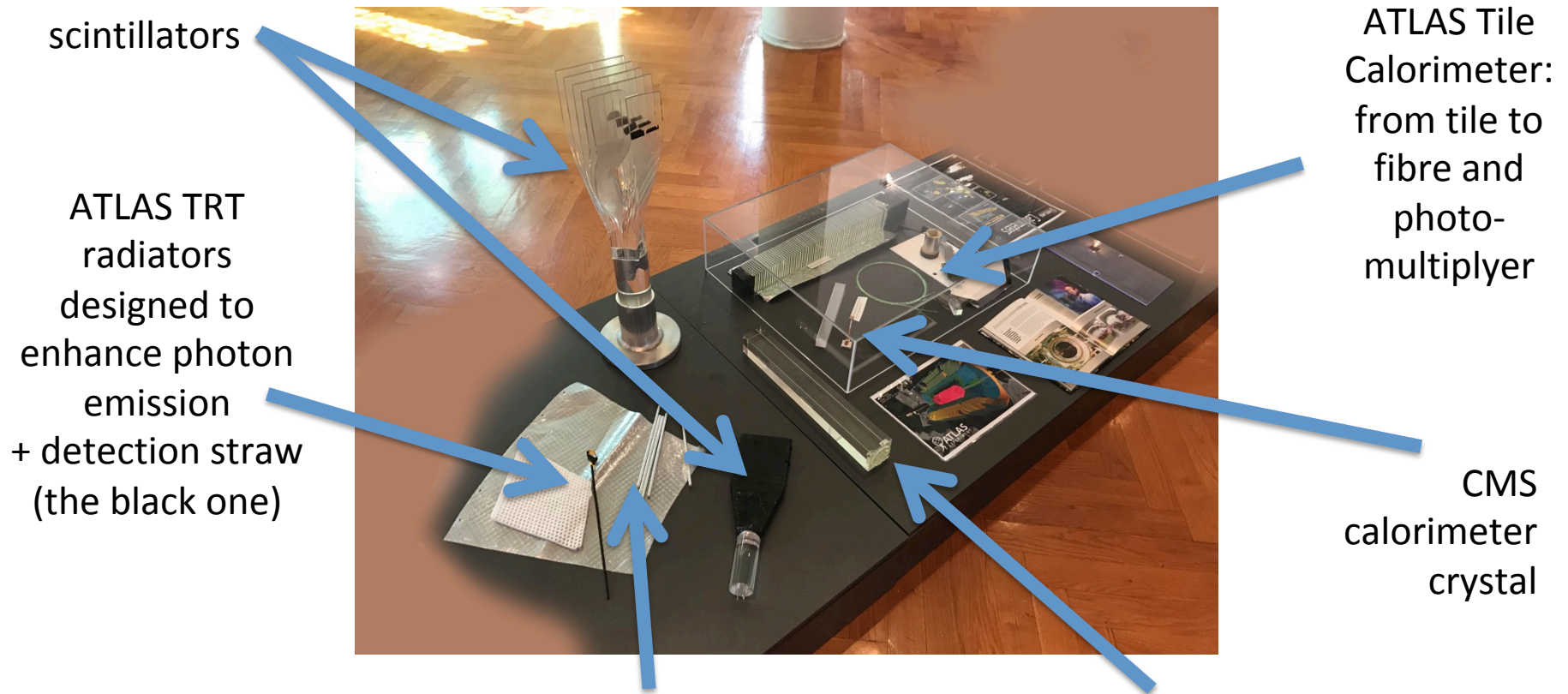
*Past: OPAL strip detector.*

*Present: ATLAS & CMS strip detectors*

*Future: ATLAS pixel tests chips*



# Particles interaction with material: HEP know-how to make use of light emission & detection

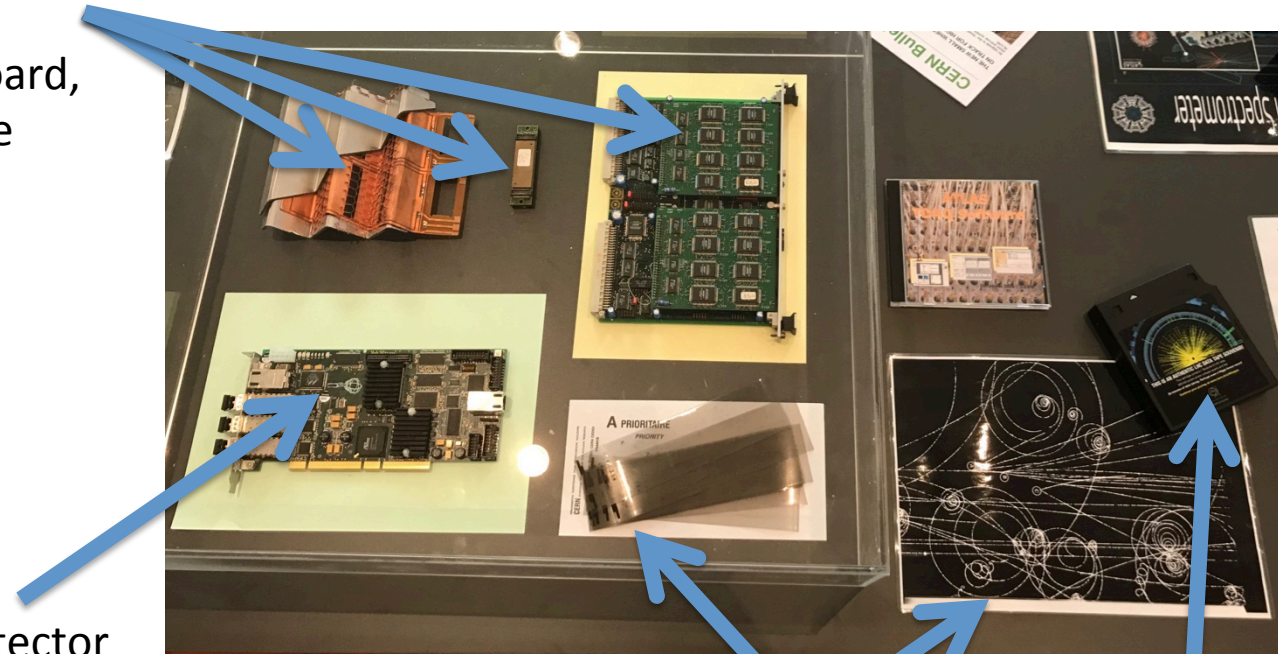


Other straws are place-holder to illustrate “tubes” in our detectors (will soon have real ones ! )

# Data ? From bubble chamber negatives to electronics & computers

ATLAS LAr Calorimeter readout: electrodes, L1 trigger summation board, readout board prototype

ATLAS Data Acquisition board:  
Receives and stores detector signals", trigger yes/no . Specialised chips (FPGA). The rest of the chain is standard computer equipment



Bubble chamber negatives and images on an envelope ("pre web transport medium")

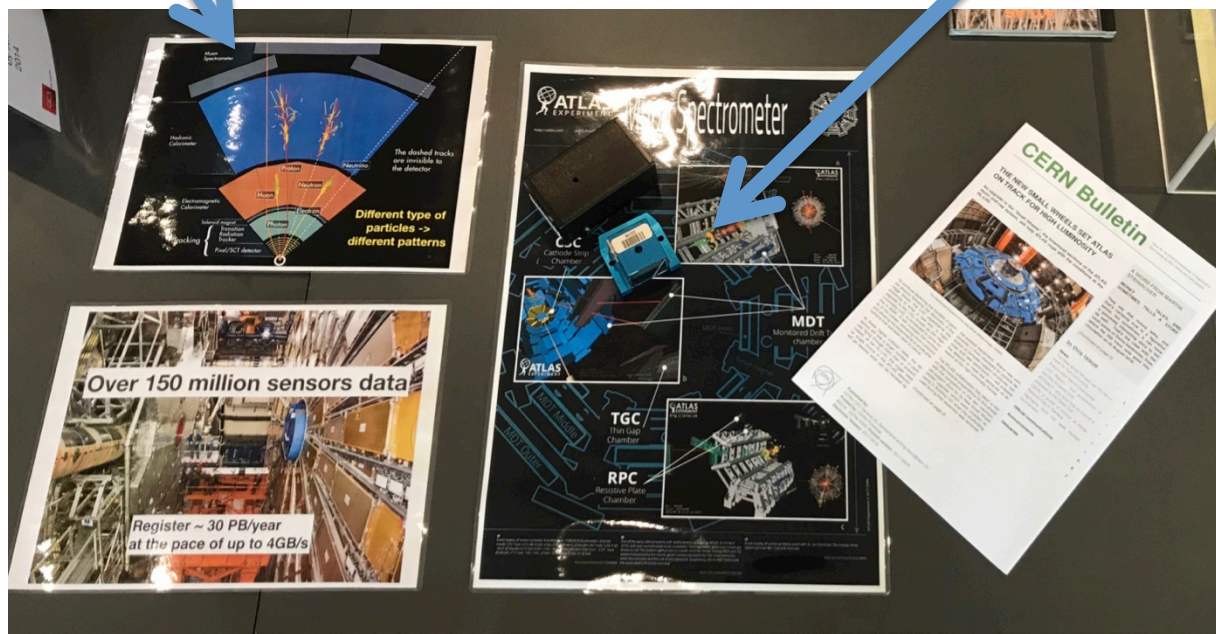
LHC data on tape



# Making sense out of all these numbers: the ATLAS big wheels alignment example

Muon Identification principle

ATLAS Big Wheels alignment cameras



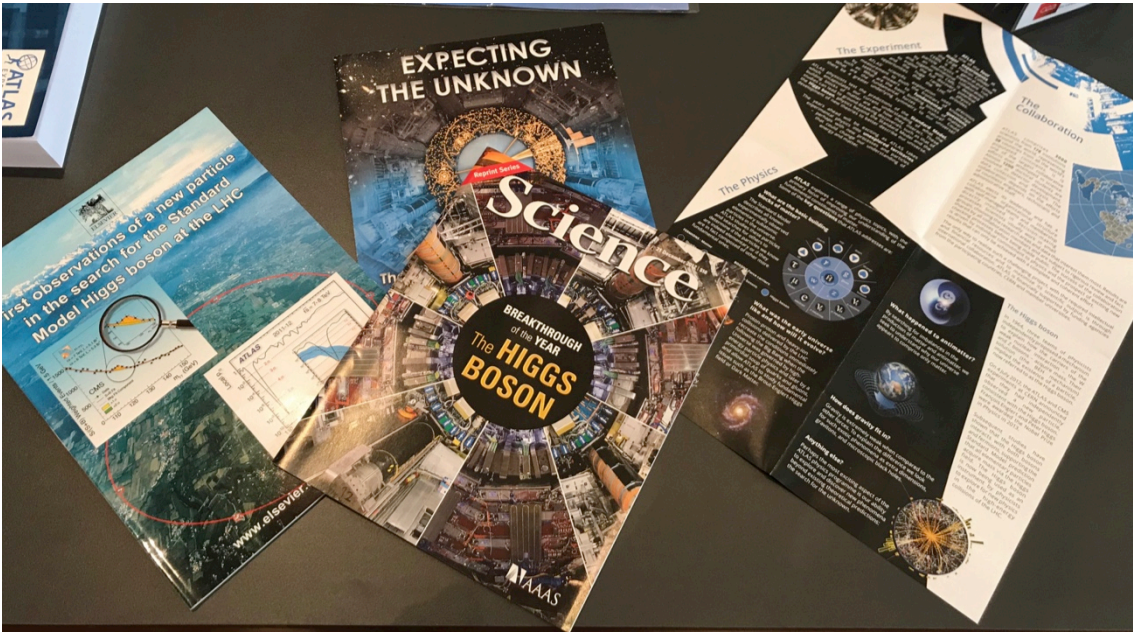
Questions / suggestions: Claire Adam



# Software & computing: “connecting the dots” is a worldwide endeavour



# Physics !





# Looking into the future: LHC HL upgrade, a challenge for the Trigger

