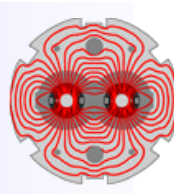


**ECFA - TOOC**



**ECFA HL-LHC Workshop**  
**PG7: Trigger, Online, Offline and Computing**  
**Preparatory Group Workshop: L1 Trigger:**  
**Welcome and Introduction**

**Wesley H. Smith**

***U. Wisconsin - Madison***

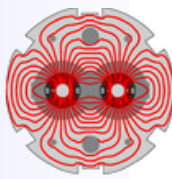
**Graeme Stewart**

***U. Glasgow***

**September 5, 2014**



# ECFA TOOC Membership



**ALICE: Latchezar Betev, Mikolaj Krzewicki, Pierre Vande Vyre,**

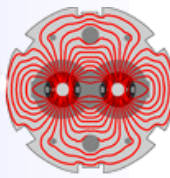
**ATLAS: Graeme Stewart, Benedetto Gorini, Nikos Konstantinidis, Imma Riu, Stefano Veneziano**

**CMS: Wesley Smith, Maria Girone, David Lange, Frans Meijers**

**LHCb: Peter Clarke, Vava Gligorov, Niko Neufeld**



# Identified Topics: L1/L0 Trigger



**Novel technologies such as associative memory devices and track triggers**

**Multi-variate trigger strategy**

**Real time alignment and calibration strategy**

**Architecture Comparisons: L0 (if applicable), L1, L2 (if applicable) rates and latencies. Justification of differences.**

**Performance Comparisons: Predicted trigger rates for various benchmark signals with and without a tracking trigger. Specific rate reductions from tracking trigger.**

**Triggering using Pixels.**

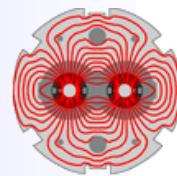
**Use of timing information.**

**Simulation of trigger (e.g. associative memories)**

**IBM's Power initiative and in general non-x86 FPGA/CPU hybrids including OpenCL for FPGAs**



# Agenda



- 09:00 **Introduction 10'**  
Speaker: Wesley Smith (University of Wisconsin (US))
- 09:10 **Real time multivariate classifiers 20'**  
Speaker: Balázs Kégl (Linear Accelerator Laboratory)
- 09:30 **ATLAS Phase II Trigger architecture and L0/L1 menu 30'**  
Speaker: Dr. Brian Petersen (CERN)
- 10:00 **CMS Phase II Trigger architecture and L1 menu 30'**  
Speaker: Oliver Buchmueller (Imperial College Sci., Tech. & Med. (GB))
- 10:30 **Break 15'**
- 10:45 **ATLAS L1 Track trigger description 30'**  
Speaker: Nikos Konstantinidis (University College London (UK))
- 11:15 **CMS L1 Track trigger description 30'**  
Speaker: Prof. Anders Ryd (Cornell University (US))
- 11:45 **LHCb Single Track Trigger 20'**  
Speaker: Vladimir Gligorov (CERN)

Timing is tight.  
Speakers are  
asked to keep  
to their times