

# **Annual Concurrency Forum Meeting**

## **Report of Contributions**

Contribution ID: 0

Type: **not specified**

# Managing the Memory Consumption in Parallel Gaudi (GaudiMP)

*Tuesday, 5 February 2013 16:25 (20 minutes)*

**Presenter:** Mrs RAUSCHMAYR, Nathalie (CERN)

**Session Classification:** Session: Memory Optimization techniques

Contribution ID: 1

Type: **not specified**

## **AthenaMP. Sharing memory between processes using COW**

*Tuesday, 5 February 2013 16:10 (15 minutes)*

**Presenter:** TSULAIA, Vakhtang (LBNL)

**Session Classification:** Session: Memory Optimization techniques

Contribution ID: 2

Type: **not specified**

## **Kernel-compressed Memory and Zero Pages**

*Tuesday, 5 February 2013 16:00 (10 minutes)*

**Presenter:** BLOMER, Jakob (CERN)

**Session Classification:** Session: Memory Optimization techniques

Contribution ID: 3

Type: **not specified**

## **GPUs in Geant4**

*Tuesday, 5 February 2013 09:05 (15 minutes)*

**Presenter:** JUN, Soon Yung (Fermilab)

**Session Classification:** Session: Co--processors and Accelerators

Contribution ID: 4

Type: **not specified**

## GPUs In CMS

*Tuesday, 5 February 2013 09:20 (15 minutes)*

**Presenter:** HAUTH, Thomas (CERN)

**Session Classification:** Session: Co--processors and Accelerators

Contribution ID: 5

Type: **not specified**

## NA62 Trigger

*Tuesday, 5 February 2013 09:35 (15 minutes)*

**Presenter:** PANTALEO, Felice (CERN)

**Session Classification:** Session: Co--processors and Accelerators

Contribution ID: 6

Type: **not specified**

## **GooFit: GPU implementation of MINUIT**

*Tuesday, 5 February 2013 09:50 (15 minutes)*

**Primary author:** Dr ANDREASSEN, Rolf (University of Cincinnati)

**Co-author:** Prof. SOKOLOFF, Michael (University of Cincinnati)

**Presenter:** Dr ANDREASSEN, Rolf (University of Cincinnati)

**Session Classification:** Session: Co--processors and Accelerators



Contribution ID: 7

Type: **not specified**

## **Multi-threaded Frameowrk Introductory talk**

*Monday, 4 February 2013 11:00 (10 minutes)*

**Presenter:** Mr KOWALKOWSKI, Jim (Fermilab)

**Session Classification:** Session: Multi-threaded Frameworks

Contribution ID: 8

Type: **not specified**

## CMSSW

*Monday, 4 February 2013 11:10 (15 minutes)*

**Presenter:** Dr JONES, Christopher (Fermilab)

**Session Classification:** Session: Multi-threaded Frameworks

Contribution ID: 9

Type: **not specified**

## **Art and the intensity frontier**

*Monday, 4 February 2013 11:25 (15 minutes)*

**Presenter:** Dr GREEN, Chris (FNAL)

**Session Classification:** Session: Multi-threaded Frameworks

Contribution ID: **10**

Type: **not specified**

## **The CERN Concurrency Framework Project (CF4Hep)**

*Monday, 4 February 2013 11:40 (15 minutes)*

**Presenter:** Dr HEGNER, Benedikt (CERN)

**Session Classification:** Session: Multi-threaded Frameworks

Contribution ID: 11

Type: **not specified**

## Simulation Vector Prototype

*Monday, 4 February 2013 11:55 (15 minutes)*

**Presenter:** GHEATA, Andrei (CERN)

**Session Classification:** Session: Multi-threaded Frameworks

Contribution ID: 12

Type: **not specified**

## **ATLAS Multithreading experiences**

*Monday, 4 February 2013 12:10 (15 minutes)*

**Presenter:** LAVRIJSEN, Wim (LBNL)

**Session Classification:** Session: Multi-threaded Frameworks

Contribution ID: 13

Type: **not specified**

## Discussion and Conclusions

*Monday, 4 February 2013 14:45 (45 minutes)*

**Session Classification:** Session: Multi-threaded Frameworks II

Contribution ID: 14

Type: **not specified**

## **ATLAS needs and plans**

*Monday, 4 February 2013 09:00 (15 minutes)*

**Presenter:** SEUSTER, Rolf (TRIUMF)

**Session Classification:** Session: Experiments Projects Plans



Contribution ID: 15

Type: **not specified**

## **ALICE concurrency needs and plans**

*Monday, 4 February 2013 09:15 (15 minutes)*

**Presenter:** GHEATA, Andrei (CERN)

**Session Classification:** Session: Experiments Projects Plans

Contribution ID: 16

Type: **not specified**

## **CMS Multi-core Application 2013 Update**

*Monday, 4 February 2013 09:30 (15 minutes)*

**Presenter:** SEXTON-KENNEDY, Elizabeth (FNAL)

**Session Classification:** Session: Experiments Projects Plans

Contribution ID: 17

Type: **not specified**

## **LHCb needs and plans**

*Monday, 4 February 2013 10:15 (15 minutes)*

**Presenter:** CLEMENCIC, Marco (CERN)

**Session Classification:** Session: Experiments Projects Plans

Contribution ID: **18**

Type: **not specified**

## **Linear Collider - Concurrency Needs and Plans**

*Monday, 4 February 2013 09:45 (15 minutes)*

**Presenter:** GAEDE, Frank (DESY)

**Session Classification:** Session: Experiments Projects Plans

Contribution ID: **19**

Type: **not specified**

## **NOvA needs**

*Monday, 4 February 2013 10:00 (15 minutes)*

**Primary author:** Dr NORMAN, Andrew (Fermilab)

**Presenter:** Dr NORMAN, Andrew (Fermilab)

**Session Classification:** Session: Experiments Projects Plans

Contribution ID: 20

Type: **not specified**

## Welcome and Meeting Goals

Contribution ID: 21

Type: **not specified**

## **A brief correlation study of x86 compiler flags and performance events**

*Tuesday, 5 February 2013 14:00 (15 minutes)*

**Presenters:** Mr NOWAK, Andrzej (CERN openlab); BOTEZATU, Mirela-Madalina (CERN)

**Session Classification:** Session: Technology Watch and Evaluations

Contribution ID: 22

Type: **not specified**

## **Practical results of the Intel MIC / Xeon Phi project at CERN openlab**

*Tuesday, 5 February 2013 14:15 (15 minutes)*

**Primary author:** Mr NOWAK, Andrzej (CERN openlab)

**Co-author:** Dr LAZZARO, Alfio (CERN openlab)

**Presenters:** Mr NOWAK, Andrzej (CERN openlab); LEDUC, Julien (CERN); JARP, Sverre (CERN)

**Session Classification:** Session: Technology Watch and Evaluations



Contribution ID: 23

Type: **not specified**

## Accelerating Science with Kepler and CUDA 5

*Tuesday, 5 February 2013 14:30 (15 minutes)*

**Primary author:** BENTZ, Jonathan (NVidia)

**Co-author:** VISCONTI, Mark (Nvidia)

**Presenter:** BENTZ, Jonathan (NVidia)

**Session Classification:** Session: Technology Watch and Evaluations

Contribution ID: 24

Type: **not specified**

## **Programming models for Intel Xeon processors and Intel Xeon Phi coprocessors**

*Tuesday, 5 February 2013 14:45 (15 minutes)*

**Primary author:** MCMILLAN, Scott (Intel)

**Presenter:** MCMILLAN, Scott (Intel)

**Session Classification:** Session: Technology Watch and Evaluations

Contribution ID: 25

Type: **not specified**

## **ASCR and HEP**

*Tuesday, 5 February 2013 15:00 (15 minutes)*

**Presenter:** Dr LUCAS, Robert (University of Southern California)

**Session Classification:** Session: Technology Watch and Evaluations

Contribution ID: 26

Type: **not specified**

## **Performance measurement tools (for parallel application)**

*Tuesday, 5 February 2013 15:15 (15 minutes)*

**Presenter:** JUN, Soon Yung (Fermilab)

**Session Classification:** Session: Technology Watch and Evaluations

Contribution ID: 27

Type: **not specified**

## **Vectorization: Introduction**

*Tuesday, 5 February 2013 11:00 (5 minutes)*

**Presenter:** Dr APOSTOLAKIS, John (CERN)

**Session Classification:** Session: Vectorization

Contribution ID: 28

Type: **not specified**

## Investigations of Vectorization in ATLAS

*Tuesday, 5 February 2013 11:15 (20 minutes)*

With focus on vector libraries and intrinsics

**Presenters:** Mr BOUDREAU, Joseph (University of Pittsburgh); VITILLO, Roberto (LBNL)

**Session Classification:** Session: Vectorization

Contribution ID: 29

Type: **not specified**

## **Autovectorisation in CMS: lessons learned, tools and techniques**

*Tuesday, 5 February 2013 11:35 (20 minutes)*

**Primary authors:** Mr PIPARO, Danilo (CERN); HAUTH, Thomas (Karlsruhe Institute of Technology); INNOCENTE, Vincenzo (CERN)

**Presenter:** Mr PIPARO, Danilo (CERN)

**Session Classification:** Session: Vectorization

Contribution ID: **30**

Type: **not specified**

## Preparing simulation for vectors

*Tuesday, 5 February 2013 11:55 (10 minutes)*

**Presenter:** GHEATA, Andrei (CERN)

**Session Classification:** Session: Vectorization



Contribution ID: 31

Type: **not specified**

## **Discussion: lessons and next steps**

*Tuesday, 5 February 2013 12:05 (20 minutes)*

**Session Classification:** Session: Vectorization

Contribution ID: 32

Type: **not specified**

## Conclusion

*Tuesday, 5 February 2013 12:25 (5 minutes)*

**Presenter:** Dr APOSTOLAKIS, John (CERN)

**Session Classification:** Session: Vectorization

Contribution ID: 33

Type: **not specified**

## **Parallelization Potential in ROOT Math libraries**

*Monday, 4 February 2013 16:05 (15 minutes)*

**Presenter:** Mr MONETA, Lorenzo (CERN)

**Session Classification:** Session: Libraries and Toolkits for a parallel world

Contribution ID: 34

Type: **not specified**

## **The Future of Parallelization in ROOT**

*Monday, 4 February 2013 16:21 (20 minutes)*

**Presenter:** Dr RADEMAKERS, Fons (CERN)

**Session Classification:** Session: Libraries and Toolkits for a parallel world

Contribution ID: 35

Type: **not specified**

## **The Future of Parallelization in Geant4**

*Monday, 4 February 2013 16:41 (20 minutes)*

**Presenter:** Dr APOSTOLAKIS, John (CERN)

**Session Classification:** Session: Libraries and Toolkits for a parallel world

Contribution ID: 36

Type: **not specified**

## Welcome to Fermilab

*Monday, 4 February 2013 08:30 (10 minutes)*

**Presenter:** Dr ELVIRA, V. Daniel (Fermilab)

**Session Classification:** Session: Welcome and Meeting Goals

Contribution ID: 37

Type: **not specified**

## Meeting Goals

*Monday, 4 February 2013 08:40 (20 minutes)*

**Presenter:** Dr MATO, Pere (CERN)

**Session Classification:** Session: Welcome and Meeting Goals

Contribution ID: **38**

Type: **not specified**

## **Intra-module parallelism**

*Monday, 4 February 2013 14:00 (15 minutes)*

**Presenter:** Mr PIPARO, Danilo (CERN)

**Session Classification:** Session: Multi-threaded Frameworks II



Contribution ID: 39

Type: **not specified**

## Trigger integration tools

*Monday, 4 February 2013 14:15 (15 minutes)*

**Presenter:** Dr BIERY, Kurt (Fermilab)

**Session Classification:** Session: Multi-threaded Frameworks II

Contribution ID: 40

Type: **not specified**

## **Parallelization of algorithms with Tbb in the SuperB framework**

*Monday, 4 February 2013 14:30 (15 minutes)*

**Presenter:** Mr CORVO, Marco (CNRS & INFN)

**Session Classification:** Session: Multi-threaded Frameworks II

Contribution ID: 41

Type: **not specified**

## Vectors: the trends in hardware

*Tuesday, 5 February 2013 11:05 (10 minutes)*

**Presenter:** Mr NOWAK, Andrzej (CERN openlab)

**Session Classification:** Session: Vectorization

Contribution ID: 42

Type: **not specified**

## Discussion and Conclusions

*Tuesday, 5 February 2013 10:05 (25 minutes)*

**Session Classification:** Session: Co-processors and Accelerators

Contribution ID: 43

Type: **not specified**

## **Implications for the Memory Consumption using Geant4-MT**

*Tuesday, 5 February 2013 16:45 (15 minutes)*

**Presenter:** Dr APOSTOLAKIS, John (CERN)

**Session Classification:** Session: Memory Optimization techniques

Contribution ID: 44

Type: **not specified**

## Introduction

*Monday, 4 February 2013 16:00 (5 minutes)*

**Session Classification:** Session: Libraries and Toolkits for a parallel world

Contribution ID: 45

Type: **not specified**

## Introduction

*Tuesday, 5 February 2013 09:00 (5 minutes)*

**Presenter:** Mr CANAL, Philippe (FERMILAB)

**Session Classification:** Session: Co--processors and Accelerators

Contribution ID: 46

Type: **not specified**

## Experiments Projects Plans

*Wednesday, 6 February 2013 09:10 (10 minutes)*

**Primary author:** Dr MATO, Pere (CERN)

**Presenter:** Dr MATO, Pere (CERN)

**Session Classification:** Session: Meeting Summary



Contribution ID: 47

Type: **not specified**

## Multi-threaded Frameworks

*Wednesday, 6 February 2013 09:00 (10 minutes)*

**Primary author:** Mr KOWALKOWSKI, Jim (Fermilab)

**Presenter:** Mr KOWALKOWSKI, Jim (Fermilab)

**Session Classification:** Session: Meeting Summary

Contribution ID: 48

Type: **not specified**

## **Libraries and Toolkis for a parallel world**

*Wednesday, 6 February 2013 09:20 (10 minutes)*

**Primary author:** Dr HEGNER, Benedikt (CERN)

**Co-author:** Dr MATO, Pere (CERN)

**Presenter:** Dr MATO, Pere (CERN)

**Session Classification:** Session: Meeting Summary

Contribution ID: 49

Type: **not specified**

## Co-processors and Accelerators

*Wednesday, 6 February 2013 09:30 (10 minutes)*

**Primary author:** Mr CANAL, Philippe (FERMILAB)

**Presenter:** Mr CANAL, Philippe (FERMILAB)

**Session Classification:** Session: Meeting Summary

Contribution ID: 50

Type: **not specified**

## Vectorization

*Wednesday, 6 February 2013 09:40 (10 minutes)*

**Primary author:** Dr APOSTOLAKIS, John (CERN)

**Presenter:** Dr APOSTOLAKIS, John (CERN)

**Session Classification:** Session: Meeting Summary

Contribution ID: 51

Type: **not specified**

## Technology Watch and Evaluations

*Wednesday, 6 February 2013 09:50 (10 minutes)*

**Primary author:** Dr ELVIRA, V. Daniel (Fermilab)

**Presenter:** Dr ELVIRA, V. Daniel (Fermilab)

**Session Classification:** Session: Meeting Summary

Contribution ID: 52

Type: **not specified**

## Memory Optimization techniques

*Wednesday, 6 February 2013 10:00 (10 minutes)*

**Primary author:** BLOMER, Jakob (CERN)

**Presenter:** BLOMER, Jakob (CERN)

**Session Classification:** Session: Meeting Summary