

1st LHC Detector Alignment Workshop

4-6 September 2006
CERN, Geneva



The aim of the workshop is to exchange ideas and information on the issues related to alignment of detectors

- Mathematical & statistical methods
- Lessons from previous & running experiments
- Alignment software framework
- Alignment plans for LHC experiments

More Information : <http://lhc-detector-alignment-workshop.web.cern.ch>

Organising Committee :

| | |
|-----------------|-------------------|
| B. Blusk | (Syracuse) |
| D. Buchmüller | (CERN) |
| A. Jacholkowski | (Catania) |
| B. Marzani | (Garda (Valenda)) |
| T. Rul | (CERN) |
| K. Satorik | (CERN) |
| J. Schieck | (Munich) |
| B. Vinet | (Glasgow) |



Sponsored by LCG and CERN PH departments

1st LHC Detector Alignment Workshop CERN 4-6 Sep.

Supported by LCG & CERN PH

Workshop Scope

- *Mathematical & Statistical Methods*
- *Lessons from previous & running Experiments*
- *Alignment Software Infrastructure*
- *Alignment Plans for the LHC Experiments*

Invited Speakers

- Volker Blobel (Algorithm)
- Rudi Fruehwirth (Algorithm)
- Dave Brown (ALEPH/BABAR)
- Claus Kleinwort (H1/Zeus)
- Aart Heijboer (CDF)
- Spyridon Margetis (STAR)
- Fred Wickens (SLD)

Monday 04 September 2006

Introduction - 40-SS-D01 (09:00-10:30)

The idea is to present in crisp presentations the context and requirements concerning alignment for each experiment

| time | [id] title | presenter |
|-------|--|---------------------|
| 09:00 | [25] Workshop Introduction (00h10') | BUCHMUELLER, Oliver |
| 09:10 | [2] Alignment Challenge @ ATLAS (00h20') | BAUER, Florian |
| 09:30 | [4] Alignment Challenge @ CMS (00h20') | WEBER, Martin |
| 09:50 | [5] Alignment Challenge @ LHCb (00h20') | BLUSK, Steve |
| 10:10 | [3] Alignment Challenge @ ALICE (00h20') | JACHOLKOWSKI, Adam |

break - 40-SS-D01 (10:30-10:45)

Mathematical Methods and Algorithms - 40-SS-D01 (10:45-12:40)

| time | [id] title | presenter |
|-------|--|------------------|
| 10:45 | [0] Alignment Algorithms (01h00') | BLOBEL, Volker |
| 11:45 | [1] Alignment using a Kalman Filter Technique (00h45') | FRUEHWIRTH, Rudi |

Alignment Experience from other Experiments - 40-SS-D01 (14:00-18:00)

| time | [id] title | presenter |
|-------|--|--------------------|
| 14:00 | [9] Alignment Experience from STAR (00h45') | MARGETIS, Spyridon |
| 14:45 | [6] Alignment Experience from BABAR/ALEPH (00h45') | BROWN, Dave |
| 15:30 | [7] Alignment Experience from ZEUS/H1 (00h45') | KLEINWORT, Claus |
| 16:15 | break (00h15') | |
| 16:30 | [14] Alignment Experience from SLD (00h45') | WICKENS, Fred |
| 17:15 | [8] Alignment Experience from CDF (00h45') | HEIJBOER, Aart |

Tuesday 05 September 2006

Overview talks for selected topics - 40-SS-D01 (09:00-12:30)

Overview of important alignment subjects at the LHC. Each talk is a summary of all four experiments. This session is also meant as introduction to the following "Alignment Strategy Session".

| time | [id] title | presenter |
|-------|---|--------------------|
| 09:00 | [18] Detector Description (00h30') | CHESHKOV, Cvetan |
| 09:30 | [22] Tracking Software and algorithms (00h30') | STRANDLIE, Are |
| 10:00 | [17] Impact of Misalignment on Physics (00h30') | STEINBRUECK, Georg |
| 10:30 | break (00h15') | |
| 10:45 | [21] Validation of the Alignment (00h30') | GOLLING, Tobias |
| 11:15 | [19] Hardware based alignment systems (00h30') | WITTMER, Bruno |

Alignment Strategy for the LHC Detectors - 40-SS-D01 (13:00-19:15)

| time | [id] title | presenter |
|-------|--|----------------------------------|
| 13:00 | [23] LHC machine plans (00h30') | LAMONT, Mike |
| 13:30 | [12] Alignment Strategy from CMS (01h15') | |
| | - [0] Hardware Alignment Systems in CMS (00h25') | VILLA, Ivan |
| | - [1] Algorithms and SW for Hardware Alignment Systems (00h25') | ARCE, Pedro |
| | - [2] Track Based Alignment in CMS (00h30') | SCHILLING, Frank-Peter |
| 14:45 | break (00h15') | |
| 15:00 | [10] Alignment Strategy from ATLAS (01h15') | |
| | - [2] Detector Description and Databases at ATLAS (00h20') | GORFINE, Grant |
| | - [0] Status and Plans for the Inner Detector Alignment (00h25') | BRUCKMAN DE RENSTROM, Pawel |
| | - [1] Status and Plans for the Muon Detector Alignment (00h25') | PIERRE-FRANCOIS, Pierre-Francois |

Tuesday ... continued

| | | |
|-------|--|----------------------|
| 16:15 | [13] Alignment Strategy from LHCb (01h15') | |
| | - [0] Detector Description and Conditions Database (00h15') | PALACIOS, Juan |
| | - [1] T-Station Alignment Infrastructure at LHCb (00h10') | HICHEUR, Adlene |
| | - [2] Alignment of the LHCb Vertex Detector (00h20') | VIRET, Sebastian |
| | - [3] Tracking and RICH Particle Identification (00h10') | PAPANESTIS, Antonis |
| | - [4] Global Alignment of LHCb (00h10') | BLUSK, Steve |
| 17:30 | [11] Alignment Strategy from ALICE (01h15') | |
| | - [4] Alignment of the Alice Muon spectrometer using tracks (00h20') | Dr. CASTILLO, Javier |
| | - [5] Alice misalignment framework (00h20') | Dr. GROSSO, Raffaele |
| | - [3] Alice outer barrel alignment plans (00h20') | Dr. IVANOV, Marian |

Workshop Dinner - CERN - place tba (19:30-21:30)

Dinner Registration: "CLOSED" - Place: at CERN - Price per person: 30 CHF

More information about the dinner at the end

Wednesday 06 September 2006

Alignment Strategy for the LHC Detectors - 40-SS-D01 (09:30-13:45)

| time | [id] title | presenter |
|-------|--|---------------------------------------|
| 09:30 | [24] Alignment Survey Data (01h00') | LASSEUR, Christian |
| | - [0] Session Introduction (00h25') | LASSEUR, Christian |
| | - [1] (00h35') | ALL |
| 10:30 | break (00h15') | |
| 10:45 | [15] workshop summary (00h45') | BROWN, Dave |
| 11:30 | break (00h15') | |
| 11:45 | [16] "Round Table Discussion" (01h00') | |
| | - [0] Discussion Introduction (00h10') | JACHOLKOWSKI, Adam SCHIECK, Jochen |

- *First “workshop impression”*
- *How to continue*
- *Workshop Documentation*
- *etc*

Dinner on Tuesday (after last Tuesday session)

Menu/Bufferet:

ASSORTIMENT ANTI PASTI (fenouils, poivrons,
aubergines, courgettes,,)

SALADE MELEE

SALADE DE TOMATE BASILIC, CELERI ET
POMMES ROUGES

SALADE DE POMMES DE TERRE

AIGUILLETES DE SAUMON

JAMBON BLANC/JAMBON CRU

ROTI DE VEAU

PLATEAU DE FROMAGES

SALADE DE FRUITS

TARTE AUX POMMES/CREME CARAMEL

CHASSELAS LES VALLIERES ET GAMAY LES
VALLIERES

EAUX MINERALES ET CAFES

Contribution: 30 CHF/person

(registration was required)

How to pay your contribution:

- go to ATLAS secretariat in 40-4-D06

Contact: [Connie Potter](#)

- pay you 30CHF and cross your Email
from the list

Please pay TODAY!

Thanks