

Oxford ILC Groups

Andrei Nomerotski

- John Adams Institute MDI/BDS groups
- LFCI –Vertex Detector
- All above is instrumentation surrounding IP

JAI

- FONT (Phil Burrows ..)
 - ◆ Feedback On Nano-second Timescales - intra-train beam-based feedback system to maintain beam collisions
- MonaLisa (David Urner ..)
 - ◆ Monitoring of Alignment and Stability with high Accuracy using interferometry
- LaserWire (Nicolas Delarue ..)
 - ◆ Beam dimensions diagnostics using lasers
- Smith-Purcell (George Doucas ..)
 - ◆ Longitudinal profile diagnostics using Smith-Purcell radiation

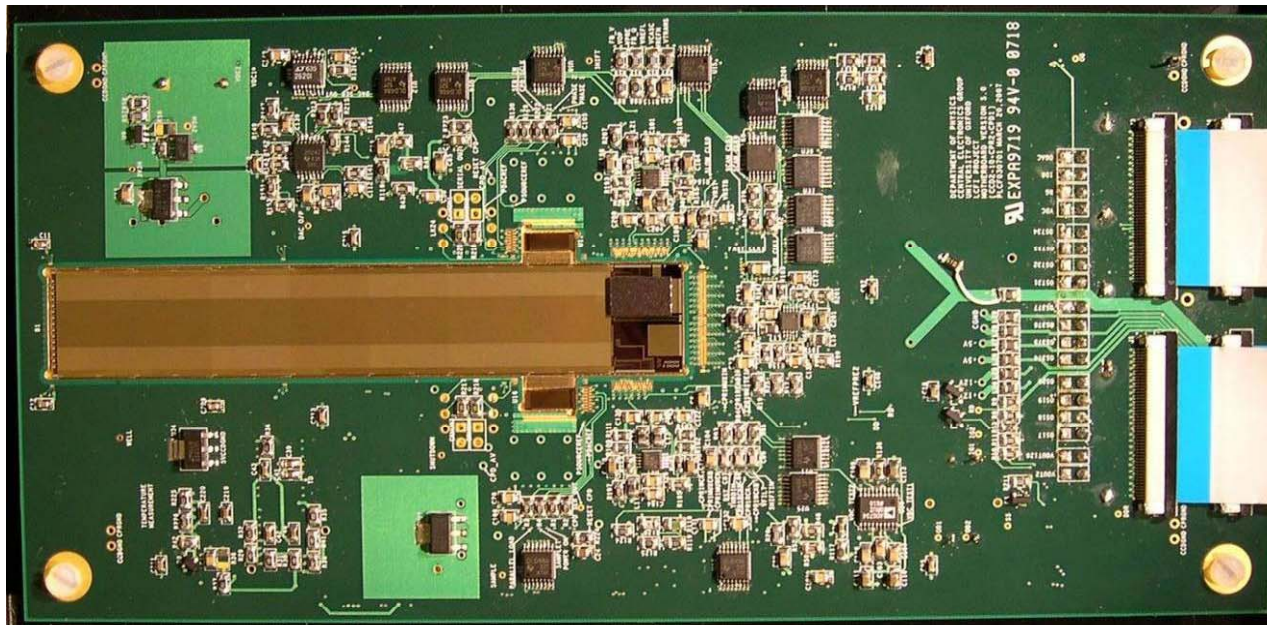
All relevant to IP region, beampipe design and background simulations

LCFI: Physics Simulations

- Strong group (Sonja Hillert, Tomas Lastovicka, Ben Jeffery, Erik Devetak)
- Main focus – vertexing and flavour tagging algorithms
 - ◆ LCFI Vertexing Package released in April 2007, includes ZVTOP/ZVKIN (a la' SLD) Vertexing and NN based flavour tagging
 - ◆ Uses LCIO interface – universal
 - ◆ Already integrated to LDC Marlin framework
- Ready to move on to study physics benchmarks
 - ◆ Sensitivity studies and VD design optimization (geomerty & material)
 - ◆ Bbbar FB asymmetry, top anomalous couplings, SUSY scenarios resulting in soft b/c/tau jets ...
- Need to start using LCFI Vertexing Package in SiD simulation/ reconstruction framework

LCFI: Sensors & Electronics

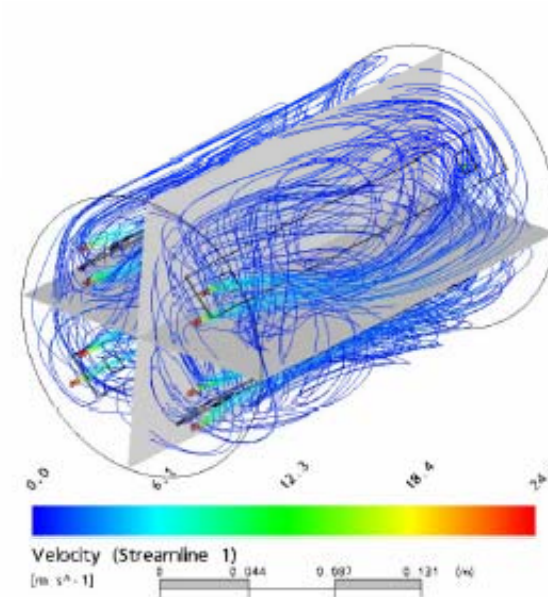
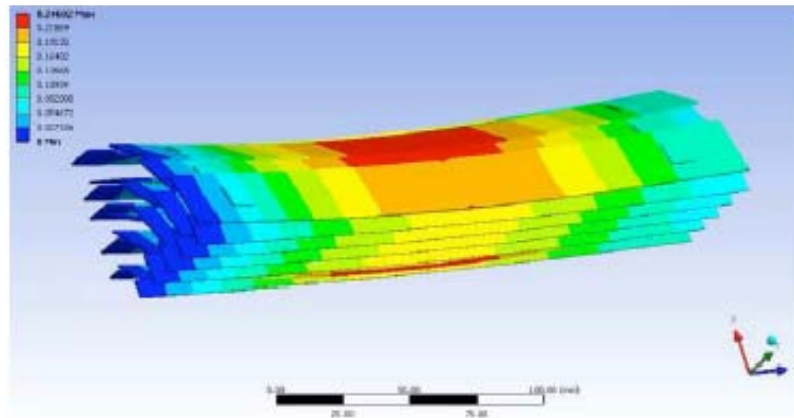
- Oxford designed external electronics for CCD sensors (Johan Fopma, Brian Hawes, Rui Gao)



- Have two setups for electronics and CPCCD testing

LCFI: Mechanics

- FEA and CFD simulations of air cooling, global VD design (Stephanie Yang)
 - Computer simulations
 - FEA and CFD



- LCFI established a regular mechanical meeting with Fermilab and SLAC groups – first meeting on 22/5, next one on 12/6

Mechanical Workshop in Oxford



'Bridgeport VMC, 4-axis CNC Milling Machine.

Feature:- 4-axis CNC milling machine for the production of high precision complex components
Projects used:- ATLAS; LiCAS; Laser-wire; MICE; CLOVER etc



BOY 220 Injection moulding machine.

Feature:- Used for the moulding of small polymer components.
Projects used:- A considerable number of components for the ATLAS project were manufactured on this machine, particularly for F.S.I.



'ROBOFIL' 240cc EDM Wire Eroder.

Features:- Used for the Electro Discharge Cutting of extreme complex shapes in hard or difficult to machine materials. It can handle materials up to 300mm thickness
6 Projects:- Most used and on almost every project

- SP3 Actspark Sink Spark Eroder
- Bridgeport VMC 1000 Milling Machine With 4th Axis.
- Robofil240cc Wire Eroder.
- Wenzal CMM Machine.
- Tornado Bar Feed Lathe With Live Tooling.
- K3 Lathe.
- SD1 Actspark EDM Hole Driller 0.5-3.00mm dia.
- Jones & Shipman Cylindrical Grinder.
- Jones & Shipman Surface Grinder.
- Bridgeport Turret Mills.
- Bridgeport EzTrack.
- Scharmann Horizontal / Vertical Borer.
- Pillar Drills.
- Huron milling machines NU4 Type.
- BCA 12x30 Jig Borer.
- Aciera F1 Mill.
- Deckel 3 Axis CNC Mill.
- Watchmakers Pillar Drills.
- DSG 25-72 Lathe.
- DSG Lathe 1812.
- Colchester Student 2500 Lathes.
- Hardinge HLVH Lathe.
- Watchmakers Schaubln 70 Lathe.
- Pulsarc Micro Tig Welding 0.1-10 AMP Range
- Millar 350 Syncrowave Tig Welder

ATLAS Clean Room Facilities

- ATLAS Barrel Silicon Tracker has been assembled in Oxford
- A lot of this infrastructure is still in place

