



LDAS Camp

LIGO-G010223-00-Z

5 June 2001

L.S.Finn/LIGO Scientific Collaboration

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Goals

- The LIGO data-flow model
 - » From the detector through detector diagnostics through analyses
 - » Introduction to software systems that manipulate the data or query the database
 - DMT, LDAS, LAL, GUILD
- DMT Workshop
 - » How to develop and run DMT monitors that produce any or all of database entries, graphical displays, web page or text reports, or trend frames
- LDAS/LAL Workshop
 - » Programming for LAL, parallel processing in LDAS, and integrating LAL-coded parallel search programs into the LDAS system



Format

- Separate LDAS/LAL, DMT Workshops
- Morning Lectures
 - » 9 - Noon
 - » Two approximately 1:15 lectures with an 0:30 break
 - » Demos
- Afternoon Labs
 - » 1:30 - 5 PM
 - » Based on AM lectures
- Computers and accounts
 - » Software development will take place on LIGO computers
 - » Your laptops are your keyboard and screen
 - » Network access via DHCP
 - Use hubs on table or go wireless if you've got it
 - » LIGO Lab Workshop accounts will be distributed Wednesday, either before lecture or at beginning of lab



Tuesday: Orientation

- The Data Monitoring Tool and the metadata base
 - » John Zweizig, Peter Shawhan
- Purpose
- Hardware/network interconnection
- The DMT execution environment
- The DMT programming Environment
- Using root for quick results
- Running and interacting with a simple monitor
- Using Guild to access the database
- LDAS/LAL
 - » Kent Blackburn, Philip Charlton, Peter Shawhan
- Data flow model and LDAS anatomy
 - » The conceptual data flow and its implementation in LDAS/LAL
- Using LDAS
 - » LDAS Commands & Syntax
 - » LDAS Log files and job tracking
 - » Ways of issuing LDAS Commands
- The LDAS/LAL Connection (Phi)
 - » LAL, the wrapperAPI and LDAS

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DMT Workshop Syllabus

- **Wednesday: DMT Programming Basics**
 - » Running ROOT; C++ concepts for the C programmer; DMT containers; Signal Processing in the DMT; the Data Accessor Class. Writing and debugging a basic monitor in ROOT.
- **Thursday: The DMT Programming Environment**
 - » The Data Environment; the Monitor Data AP; sending data to the DataViewer. Turning your ROOT-based monitor into a DMT monitor
- **Friday: Advanced Topics**
 - » Generating triggers; creating and viewing trend frames; writing html reports; detailed view of DMT operations: the process manager, the shared memory partition, etc.
- **Saturday: Wrap-up**



LDAS/LAL Workshop Syllabus

- Wednesday: Preliminaries (Sam Finn)
 - » Goal: Installation of LAL, LALWrapper, LDAS subset, running a search in the test harness, adding a new search
- Thursday: Coding for LAL (John Whelan)
 - » Goal: How to code for LAL. Procedure prototypes, datatypes. Write one or more LAL procedures that implement the core of a new “search”
- Friday: Parallel programming and the interface to LDAS (Sam and Philip Charlton)
 - » Goal: What is parallel programming? “Parallelizing” your search. Interfacing your search to LDAS and testing in the test harness
- Saturday: Wrap-up