

Acronyms Used in LIGO/LSC

40m Lab	R&D/Test Facility at LIGO/Caltech	
AAAS	American Association for the Advancement of Science	
AC	Alternating Current	
ACIGA	Australian Consortium for Interferometric Gravitational Astronomy	
ACWP	Actual Cost of Work Performed	
ADC	Analog to Digital Converter	
ADCU	Analog Data Collection Unit	
AdL	Advanced LIGO	
AdvLIGO	Advanced LIGO	
AEI	Albert Einstein Max Planck Gravitational Wave Institute	
AL	Advanced LIGO	
ALUK	Advanced LIGO UK consortium	
AM	Amplitude Modulation	
AMU	Atomic Mass Unit	
ANU	Australian National University	
AOS	Auxiliary Optics System (subsystem in AL)	
API	Application Programmer's Interface	
ASC	Alignment Sensing / Control (detector subsystem)	
ATM	Asynchronous Transfer Module	
BBH	Binary Black Hole pair	
BCWP	Budgeted Cost of Work Performed	
BCWS	Budgeted Cost of Work Scheduled	
BH	Black Hole	
BH-BH	Binary Black Hole pair	
BNS	Binary Neutron Star pair	
BOSEM	Birmingham University version of the OSEM, optical sensor - electromagnetic motor unit	
BPCU	Beam Pointing Control Unit	
BS	Beamsplitter (optical component)	
BSC	BeamSplitter Chamber (large vacuum chamber)	
BT	Beam Tube	
BTE	Beam Tube Enclosure	
CA	Channel Access (EPICS Control & Monitoring system network protocol)	
CACR	Center for Advanced Computer Research (Caltech)	
CAD	Computer Aided Design	
CBC	Compact Binary Coalescence	
CC	Civil Construction	
CCB	Change C	CD Conceptual Design
CCD	Charged CCDS	Control and Data System (detector subsystem)
CDR	Conceptual	CIT California Institute of Technology
CDRL	Contract I	CMRR Common Mode Rejection Ratio
CIT	Caltech	

Acronyms Used in LIGO/LSC

CMS	Control and Monitoring System (a part of CDS)
COC	Core Optics Components (detector subsystem)
COS	Core Optics Support (detector subsystem)
CP	Chiller Pad (part of FAC)
CP	Compensation Plate (optical element part of TCS)
CW	Continuous Wave
DAQS	Data Acquisition System
DARM	Differential Arm signal (main interferometer output signal for GW signal)
DC	Direct Current (steady state - low frequency)
DCC	Document Control Center
DCU	Data Collection Unit
DET	Detector system
DI	Digital Interferometry, system to allow pre-lock positioning of mirrors
DIA	Data Information Area (of reflected memory)
DMA	Direct Memory Access
DMRO	Differential Mode Read-Out
DRD	Design Requirements Document
DRR	Design Requirements Review
DSP	Digital Signal Processing
e2e	End-To-End Modeling (interferometer simulation)
EAC	Estimate at Completion
ECD	Eddy Current Damping
EDCU	EPICS Data Collection Unit
EDSU	EPICS Data Server Unit
eLIGO	Enhanced LIGO
EMC	Electro-Magnetic Compatibility
EMI	Electro-Magnetic Interference
EOM	Electro-Optic Modulator (optical hardware)
EPI	External Pre-Isolator
EPICS	Experimental Physics and Industrial Control System
ER	Engineering Run
ESD	Electro-Static Discharge
ETF	Engineering Test Facility (Caltech Lab)
ETM	End Test Mass (optical component); ETMy, ETMx for x or y 'arm'
E1	Engineering Run 1 (E4 is Engineering Run 4)
FAC	Facilities (part of CC)
FCMS	Facility Control and Monitoring System
FCR	Facility Control Room
FDR	Final Design Review
FFT	Fast (Discrete) Fourier Transform
FFT	Fast Fourier Transform, often used as 'FFT Model' to indicate a numerical pixelled model of optics and beam propagation
FFT	Fast Fourier Transform

Acronyms Used in LIGO/LSC

FI	Faraday Isolator (optical component)
FIFO	First In First Out
FM	Frequency Modulation
FM	Fold Mirror
FMP	Facility Modifications and Preparations
FPGA	Prgrammable Gate Array
FR	Faraday Rotator (optical component)
FS	Fused Silica
FTE	Full Time Equivalent
GASF	Geometrical Anti-Spring Filter
GDS	Global Diagnostic System
GEO	British-German Cooperation for Gravity Wave Experiment
GFLOPS	1000 MFLOPS
GPM	Gallons Per Minute
GPS	Global Positioning System
GUI	Graphical User Interface
GW	Gravitational Wave
GWDAAW	Gravitational Wave Data Analysis Workshop
GWIC	Gravitational Wave International Committee
HAM	Horizontal Access Module
HEPI	Hydraulic External Pre-Isolator, and element of the SEI
HLTS	Ham Large Triple Suspension
HPSS	High Performance Storage System (IBM)
HR	High Reflectance
HSTS	Ham Small Triple Suspensions
HTM	Higher Transverse Modes (other than TEM ₀₀ mode)
HVAC	Heating Ventilation and Air Conditioning
HWCI	Hardware Configuration Item
HWP	Half-Wave Plate (optical hardware)
Hz	Hertz
I/O	Input/Output
ICD	Interface Control Document
IDE	Integrated Drive Electronics (disk standard)
IFO	Interferometer
IL	Initial LIGO
iLIGO	Initial LIGO
IMC	Input Mode Cleaner (initial LIGO 'MC')
InGaAs	Indium-Gallium-Arsenide
INS	Installation
INSA	French National Institute for Applied Science
IOO	Input Optics (detector subsystem, formerly named Input / Output Optics)
IP	Internet Protocol, or Inverted Pendulum

Acronyms Used in LIGO/LSC

ISC	Interferometer Sensing and Control
ISI	Internal Seismic Isolation, an element of the SEI
ISR	Interrupt Service Routine
ITM	Input Test Mass (optical component); ITM _x , ITM _y for y or x 'arm'
IV&V	Integration, Verification, and Validation
IXS	Information eXchange Services
kpc	Kiloparsec
LA	Louisiana
LAE	Laser Enclosure Area
LAI	Lock Acquisition Interferometer
LAL	LIGO Algorithm Library
LAS	Lock Acquisition System
LASTI	LIGO Advanced Systems Test Interferometer (test facility at LIGO/MIT)
LDAS	LIGO Data Analysis System
LDR	Laser Diode Room
LHAM	Horizontal Access Module at Louisiana Site
LHO	LIGO Hanford Observatory
LIGO	Laser Interferometer Gravitational-Wave Observatory
LISA	Laser Interferometer Space Antenna
LLO	LIGO Livingston Observatory
LMA	Laboratoire des Matériaux Avancés - vendor for optical coatings in Lyon, France
LMXB	Low-Mass X-Ray Binary
LOS	Large Optic Suspension
LSC	Length Sensing / Control (detector subsystem)
LVDT	Linear Variable Differential Transducer
LVEA	Laser and Vacuum Equipment Area (of the LIGO observatories)
LZH	Laser Zentrum Hannover, partner with AEI
MAP	Memory Allocation Pointer (reflected memory)
MB	Megabyte
MC	Mode Cleaner
MCM	Mode Cleaner Mirror
MDC	Mock Data Challenge
MEPI	Magnetic External Pre-Isolator
MFLOPS	Million Floating Point Operations Per Second
MGASF	Monolithic Geometrical Anti-Spring Filter
MIMO	Multiple Input, Multiple Output
MIT	Massachusetts Institute of Technology
MMT	IFO Mode Matching Telescope
MOPA	Master Oscillator-Power Amplifier
MOU	Memorandum of Understanding
Mpc	Megaparsec

Acronyms Used in LIGO/LSC

MPI	Message Passing Interface
MRE	Major Research Equipment
MSPRC	Marginally Stable Power Recycling Cavity
MSR	Mass Storage Room
MSU	Moscow State University
MTBF	Mean Time Between Failures
MTTR	Mean Time To Repair
MZ	Mach-Zender Interferometer
NA	Not Applicable
NBI	Neutron Star Binary Inspiral
Nd:YAG	Neodymium doped Yttrium Aluminum Garnet (laser gain medium)
NDS	Network Data Server
NPRO	Non-Planar Ring Oscillator
NS	Neutron Star
NS-NS	Binary Neutron Star pair
OMC	Output Mode Cleaner
OOP	Object-Oriented Programming
OPD	Optical Path Difference
OSB	Operations Support Building
OSEM	Optical Sensor Electromagnetic Motor (suspension sensor/actuator unit)
OTF	Optics Test Facility at Caltech
PAC	Program Advisory Committee
PCI-X	Personal Computer Interconnect Extended -- computer standard for peripheral communication
PD	PhotoDiode
PDD	Preliminary Design Document
PDH	Pound-Drever-Hall (reflection locking technique)
PDR	Preliminary Design Review
PDRR	Preliminary Design Requirements Review
PDT	Photodetector
PEM	Physics Environment Monitoring
PM	Phase Modulation, or Project Management
PMC	Pre-Mode Cleaner
PMP	Project Management Plan
PO	Pick Off (usually in reference to a laser beam)
POSIX	Portable Operating System Interface (IEEE Standard 1003.1)
ppm	Parts Per Million
PRC	Power Recycling Cavity
PRM	Power Recycling Mirror
PRN	Pseudo-Random Noise
PSL	Pre-Stabilized Laser (detector subsystem)
PZT	Piezo-electric Transducer (mechanical hardware)

Acronyms Used in LIGO/LSC

Q	resonant system Quality factor (inverse of loss)
QND	Quantum Non-Demolition
QPD	Quadrant Photo Diode
Quad	Quadruple test mass suspension
RAID	Removable Array of Independent Drives
RAM	Random Access Memory
RC	Radius of Curvature of a Reflective Mirror
REO	Research Electro-Optics (Company Name)
REU	Research Experience for Undergraduates
RF	Radio Frequency
RFP	Request for Proposal
RH	relative humidity
RM	Recycling Mirror
RMS	Root mean square
RSE	Resonant Sideband Extraction
rtHz	square root Hertz
S6	GW Observation Science Run 6
s	Second
s/s	Samples/second
SAH	Sensor Actuator Heads
SAP	Sapphire Core Optics
SAS	Seismic Attenuation System
SCSI	Small Computer Standard Interface
SEI	Seismic Isolation
SLC	Stray Light Control
SM	Suspended steering Mirror (~4" diameter, simple sling suspension)
SOS	Small Optic Suspension
SPI	Seismic Platform Interferometer
SPRC	Stable Power Recycling Cavity
SR	Signal Recycled (interferometer configuration)
SRC	Signal Recycling Cavity
SRD	Initial LIGO Science Requirements Document; also Initial LIGO planned performance target
SRM	Signal Recycling Mirror
SRS	Software Requirement Specification
SUP	Support Equipment
SURF	Summer Undergraduate Research Foundation
SUS	Suspension Subsystem (sometimes also Suspension assembly)
SW	Solid Works (computer aided design software)
SYS	Detector Systems Engineering
TAMA	Japanese Interferometric Gravitational-Wave Project
TB	Terabytes

Acronyms Used in LIGO/LSC

TBD	To Be Determined (or To Be Done)
TCP	Transport Control Protocol
TCS	Thermal Compensation System
TFP	Thin Film Polarizer (optical hardware)
TGG	Terbium-Gallium-Garnet (optical material used in Faraday Isolators)
TNI	Thermal Noise Interferometer (R&D/Test interferometer at LIGO/Caltech)
Triple	Triple auxiliary optic suspension
UDP	User Datagram Protocol
UF	University of Florida
UGF	Unity Gain Frequency
UHV	Ultra High Vacuum
UL	Upper Limits
VE	Vacuum Equipment (LIGO instrument chambers)
VEA	Vacuum Equipment Area (Observatory high bays)
VIRGO	French-Italian Laser Interferometer Collaboration
VME	Versa Module Eurocard
VSRM	Variable Signal Recycling Mirror
WA	Washington
WAN	Wide Area Network
WBS	Work Breakdown Structure
WFS	Wave Front Sensors