

Summary of Korean Activities

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The 6th Korea-Japan Workshop on

KAGRA

NAOJ

Members

- ❖ LSC
 - 20 Members
 - 6 senior
 - 3 post doctors
 - 4 graduate students
 - 4 technical staffs
- ❖ KAGRA: LSC plus 4 Senior members
 - HWLee, THYoon, SKim, KMCho

Detector Characterization

- ❖ Members: J. Oh, SH Oh, KM Kim, E Sohn
 - ❖ Developing the multivariate analysis pipeline, based on various types of Machine Learning Algorithms (MLA)
 - Auxiliary Channel Glitch Classification Pipeline using ANN ==> *Young-Min's talk this morning*
 - A New Trigger Generation Method using Hilbert-Huang Transform (in progress)
 - Multichannel Correlation Study using Mutual Information Index (Information theoretic analysis) ==> *John's talk tomorrow*
 - Improved scheme of glitch classification using various statistical methods (PCA, k-PCA, Pearson's correlation etc)
 - KAGRA Mock data challenge for detector characterization ==> Under discussion for taking and / or selecting data / analysis method / procedure

Instrumentation/Theory

- ❖ Members: TH Yoon, K Cho, S. Kim
 - ❖ Laser: *Tai Hyun Yoon's presentation in the morning*
 - ❖ Tilt sensor: *Kyuman Cho will be visiting 2 months coming winter to work on this*
 - ❖ Characterizing quantum and thermal aspects of the KAGRA detectors by Sangpyo Kim: *no progress(?)*

Data Analysis 1: Parameter Estimation

- ❖ Hyungwon Lee, Chunglee Kim, Jeongcho Kim
 - ❖ Developing a more realistic waveform in frequency-domain using LALSuite: *HWLee's presentation tomorrow*
 - ❖ F2Amp including 2.5pN amplitude corrections
 - ❖ Optimization of waveform to reduce computation time
 - ❖ Profiling of LALInference_MCMC in LALSuite
 - ❖ MCMC parameter estimation: *Jeongcho's presentation tomorrow*
- ❖ *There will be a technical meeting on MCMC tomorrow afternoon.*

Data Analysis 2: Computation

- ❖ Resources @KISTI
 - 420 Cores
 - 151 TB storage
 - Currently Tier 3 center of LIGO Data Grid
 - To be upgraded Tier 2 by 2016.

- ❖ Accounts at GSDC for KAGRA Members
 - Hyung Won Lee / Inje University
 - Tatsuya Narikawa / Osaka University
 - Hideyuki Tagoshi / Osaka University
 - Koh Ueno / Osaka University
 - Kazuhiro Hayama / Osaka University

- Common directory for KAGRA members:
 - /data/kagra/home

- KAGRA members can now have access to KGWG Wiki

Data Management

❖ LIGO data have been transferred to KISTI storage

Data	Type	Level	Location in CIT archive
VSR1:	hoft	HrecOnline	/archive/frames/VSR1/HrecOnline/...
VSR2:	hoft	HrecOnline	/archive/frames/VSR1/HrecOnline/...
VSR3:	hoft	HrecOnline	/archive/frames/VSR1/HrecOnline/...
VSR4:	hoft	HrecOnline	/archive/frames/VSR1/HrecOnline/...
S5:	hoft	strain-L2	/archive/frames/S5/strain-L2/...
S6:	hoft	LDAShoftC02	/archive/frames/S6/LDAShoftC02/...
S5:	RDS	L1	/archive/frames/S5/L1/...
S6:	RDS	L1	/archive/frames/S6/L1/...

❖ Current data volume: 113 TB

❖ 10 Gbps network test between CIT and KISTI was successfully done: future data transfer will be much faster

Research Activities

- Parameter Estimation for Advanced Detectors (CKim, HCho,...)
- Black Hole Binaries from Star Clusters (HMLee, CKim....): CKim's (HMLee) presentation tomorrow
- Application of the effective Fisher Matrix to frequency domain waveform (HCho,CLee)
- BNS merger frequency estimates (Chunglee Kim)
- Application of ANN to CBC-GRB search (KMKim et al.): Kyungmin's presentation tomorrow
- Black Hole capture simulations (GWKang, et al.)

Other Activities

- ❖ GW Detector Study meetings
 - New types of detectors
 - Noise analysis
- ❖ EM Followup: *M. Im's presentation this afternoon*
- ❖ Accelerated up-sampling software with GPU for SPIIR pipeline: *E. Son's presentation tomorrow*

Funding Efforts

- ❖ HM Lee's proposal to set up a new group under the Institute for Basic Sciences (IBS) is still pending
- ❖ Global Research Network (GRN) fund terminates at the end of August 2014

Amaldi Meeting update

- ❖ Tentative homepage is now available
 - <http://www.amaldi11.org>
 - Poster design under progress
 - HMLee will give a status report to GWIC on June 28 (Saturday) via tele-conference
 - Science Program should be coordinated with GWPAW which will be held one week before Amaldi at Osaka