

MIF Status Report

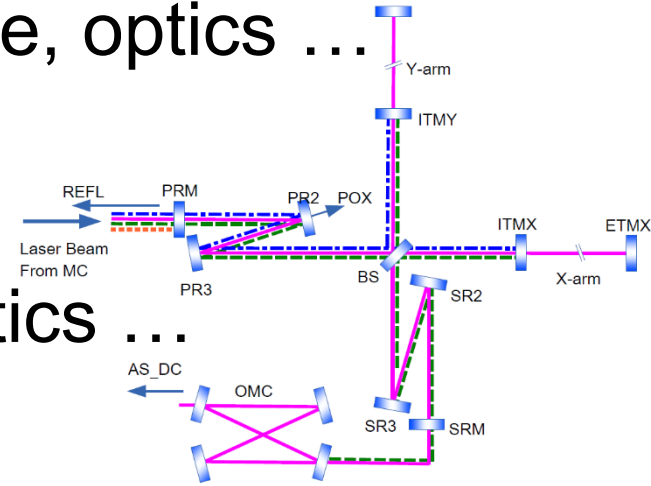
Yuta Michimura

Department of Physics, University of Tokyo

on behalf of the Main Interferometer subgroup

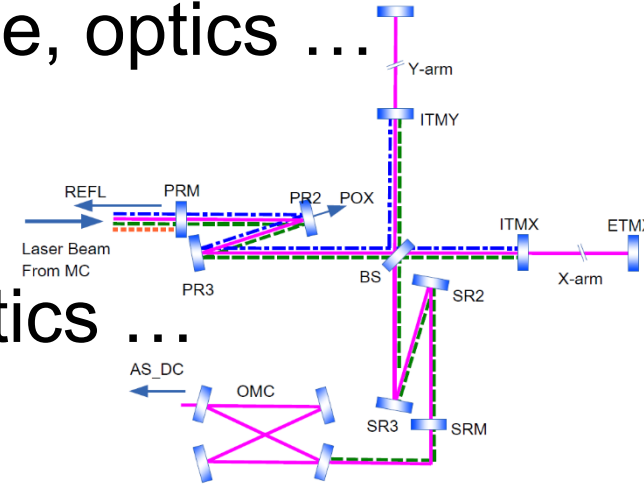
Tasks for MIF Subgroup

- **Design** the Main Interferometer including layout, controls scheme, optics ...
→ DONE
- Derive noise **requirements** for suspensions, electronics, optics ...
→ mostly DONE
- **Instrumentation** of detection optics including optics, photodiodes, cabling, electronics
→ ON GOING
- Interferometer **commissioning** from initial alignment to operation, including mode-matching, integration of signals to DAQ, locking, noise hunting, etc.



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- Interferometer **commissioning**

It seems like EO people think commissioning tasks are for “commissioning team” lead by people ON SITE

generation of signals to DAQ, locking, noise hunting, etc.

MIF Members FY2016

ON SITE
OFF SITE

| Name | Affiliation | Effort | Actual Contribution So Far |
|------------------|-------------|--------|--------------------------------|
| Yuta Michimura | UTokyo | 30 | Chief, Management, Electronics |
| Yoichi Aso | NAOJ | 10 | Sub-chief, Management |
| Osamu Miyakawa | ICRR | 10 | |
| Keiko Kokeyama | ICRR | 10 | Commissioning, Cameras |
| Eiichi Hirose | ICRR | 10 | Mirror simulation |
| Kentaro Somiya | Titech | 10 | OMC, OFI, OMMT |
| Tomotada Akutsu | NAOJ | 5 | Oplevs, Cameras, AOS related |
| Kentaro Komori | UTokyo | 5 | Locking |
| Naoki Aritomi | UTokyo | 5 | Dithering |
| Tomofumi Shimoda | UTokyo | 5 | Magnetic noise, Noise budget |
| Yutaro Enomoto | ICRR | 5 | Interferometer simulation |
| Koji Arai | Caltech | - | Support from LIGO |
| Hiroaki Yamamoto | Caltech | - | Support from LIGO, Simulation |

Updates from F2F Aug 2016

- Concluded that PRMI by March 2018 is not feasible considering the schedule ([JGW-T1605595](#))
- Output optical tables and related tasks are moved from IOO to MIF
- Sideband frequencies for IMC and ALS decided
 - IMC: 13.78 MHz ([JGW-T1605493](#))
 - ALS: 32 MHz and 33 MHz ([JGW-T1605626](#))
- Some modeling had notable progress
 - OMC suspension
 - ALS NoiseBudget
 - Cryopayload actuator design
- More RF electronics were requested to AEL

bKAGRA Readiness

Not ready ← → Ready

| | Phase 1 | Phase 2 | Phase 3 |
|--------------------|--------------------|-----------------------|----------------------|
| Analog Electronics | requested to AEL | some not yet designed | not yet designed |
| Digital Control | small modification | major modification | major modification |
| Initial alignment | planned | vague plan | - |
| Output tables | some designed | no design | upgrade? |
| ALS | - | modeling | upgrade? |
| Modeling | mostly complete | exists but not fully | exists but not fully |
| OFI / OMC | - | designing | upgrade? |