

## **Report of the ISS review on Nov. 21, 2017**

**Place:** University of Toyama, Faculty of Science Building, Room A115

**Time:** 16:00-18:30 on Nov 21, 2017

**Reviewers:** Yoichi Aso, Keiko Kokeyama, Yuta Michimura, Norikatsu Mio (via eZuce), Osamu Miyakawa

**Attendee:** Kohei Doi, Takayuki Furuhashi, Hideaki Kitazawa, Yoshiki Moriwaki, Masatake Ohashi (via eZuce), Haruhito Sakamoto

The laser intensity stabilization team at the University of Toyama presented a detailed description of the intensity stabilization system (ISS) and its development status. The reviewers appreciate the shot noise limited intensity stabilization achieved in the first loop experiment at the University of Toyama. We believe that implementation of the first loop at the KAGRA site is basically ready at this point.

To install the matured system at the KAGRA site, improvements in the circuits, implementation of the second loop and high power preparations, as well as more detailed scheduling are necessary. Recommendations from reviewers are summarized as follows.

- Please make a Gantt chart for the installation work in this December.
- Please construct a noise budget model of the entire intensity stabilization system.
- Using the noise budget model, clarify the requirements for various parts, such as the stability necessary for the first loop, bandwidth of the second loop and so on.
- Please list up things to do for high power operations (e.g. change pick-off mirror, use PBS for power attenuation, etc.), and estimate the time it takes for each item.
- Please make a roadmap for ISS servo board preparations, feedback the test board results to a new board, high power operations, and second loop implementation.