

## Vibration Isolation System Subgroup Meeting on June 8th, 2011

### ● Cabling

- ✓ Last week Riccardo had a meeting with spring company. Investigating the possibility to make springs to hold ribbon cables on the spiders along the suspension wires.
- ✓ They produce a similar shape spring, they can produce what we need at the cost of ~ 1500€ for the stamp, and then a fraction of an € per piece. We will need 1000 to 2000 of them.

### ● Preisolator

- ✓ The IP was assembled, but not tested yet
- ✓ The LVDT, actuators, and stepper motors partially assembled, few parts missing, they will be assembled and tested in the next two weeks
- ✓ Ettore will stop at Lucca in two weeks and check the last details
- ✓ The preisolator will be sent to Kashiwa at the beginning of July

### ● Prototype test of the standard filter and preisolator

- ✓ Riccardo, Kazuhiro, and Takanori will discuss the plan of the experiments in Kashiwa.

### ● Prototype test of the payload

- ✓ Need to design a structure (frame) to assemble and test the payload modal response
- ✓ Where can we find a space for testing? (tall ceiling and a crane will be necessary, an A-frame crane may be sufficient)

### ● Simulation about active damping

- ✓ The Eddy current dampers were designed for yaw modes and quite effective on yaw modes, while they are not so effective for the lowest two pendulum modes.
- ✓ The pendulum modes at low frequency should be damped by active control as they are not properly damped by the Eddy current
- ✓ Which sensors should be used? :
  - Shadow meter between Filter 3 and 4 (for the lowest pendulum mode, and inertial damping)
  - BOSEM on IM and IRM (for the second lowest pendulum mode)
- ✓ While we study these possibilities, the accelerometers on the IP are still kept as the baseline solution.

- Discussion with digital system group
  - ✓ Digital control system will be provided, by August 2011  
(so that we can use it for preisolator test)
  - ✓ Analog electronics:  
LVDT drivers and coil drivers will be brought from TAMA
  - ✓ In the longer term, NIKHEF will give us access to the production line for the advanced Virgo LVDT and actuator coil drivers.