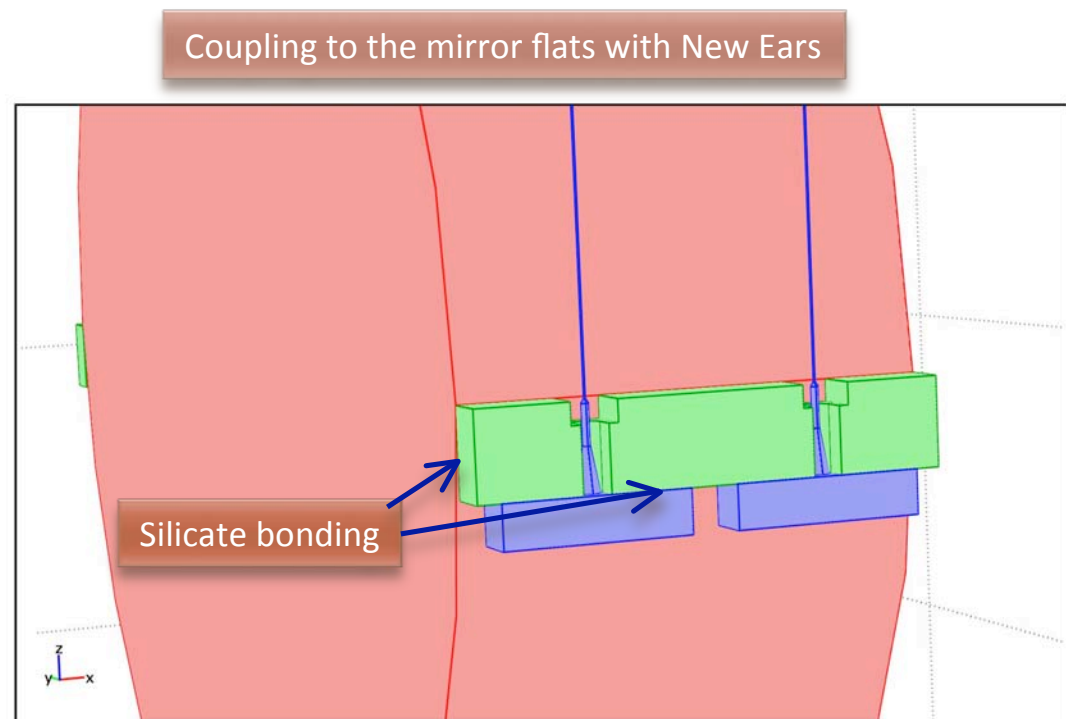
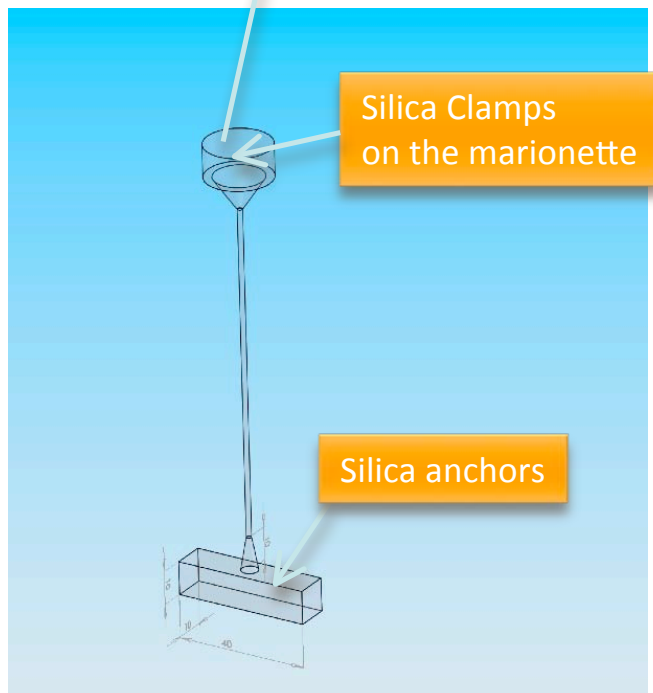
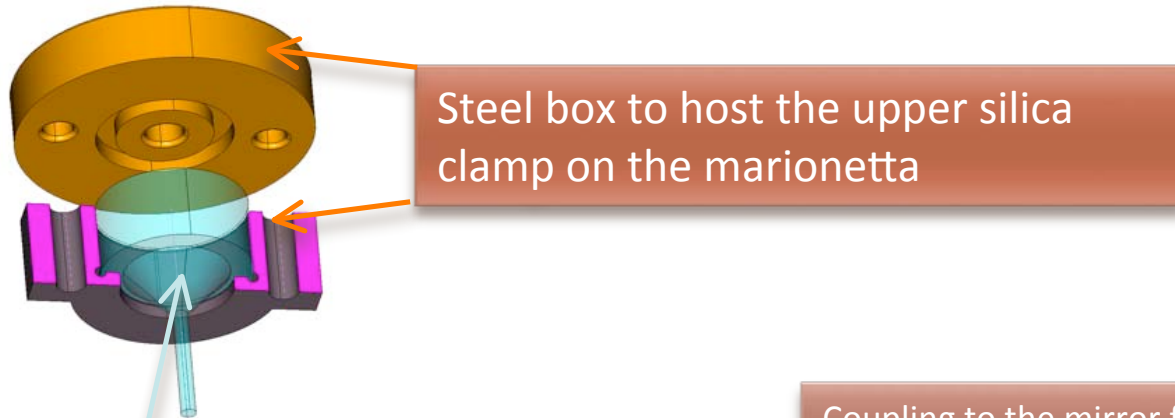


***Monolithic Suspension:  
the very last status...***

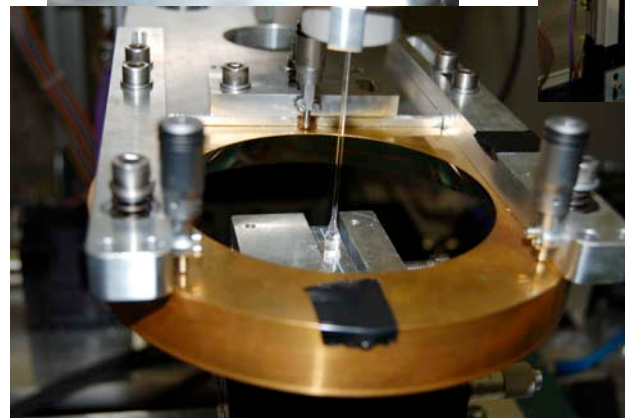
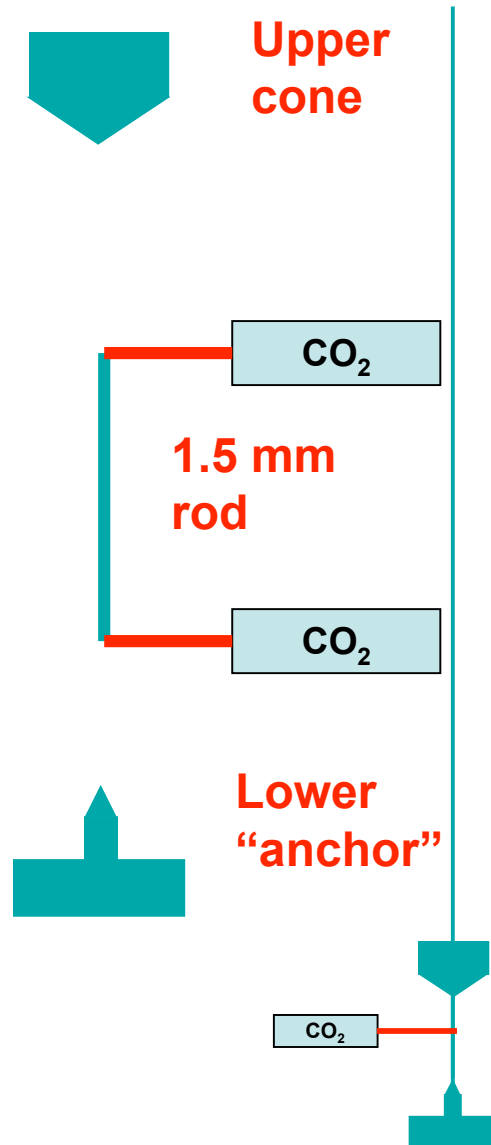
*Helios Vocca  
INFN Perugia*

# Last Suspension scheme

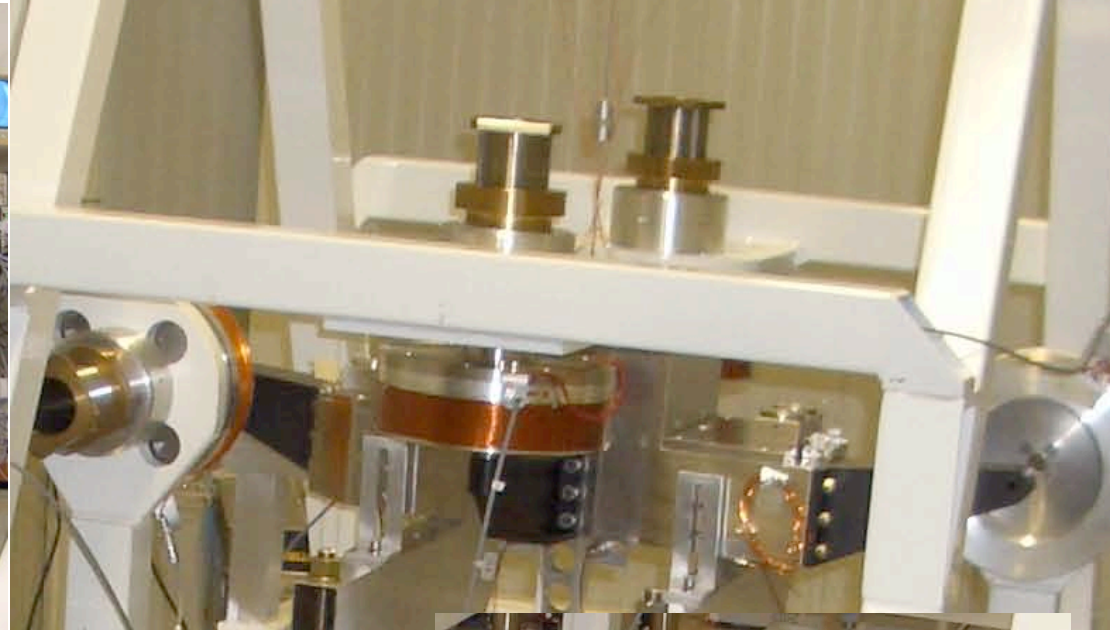
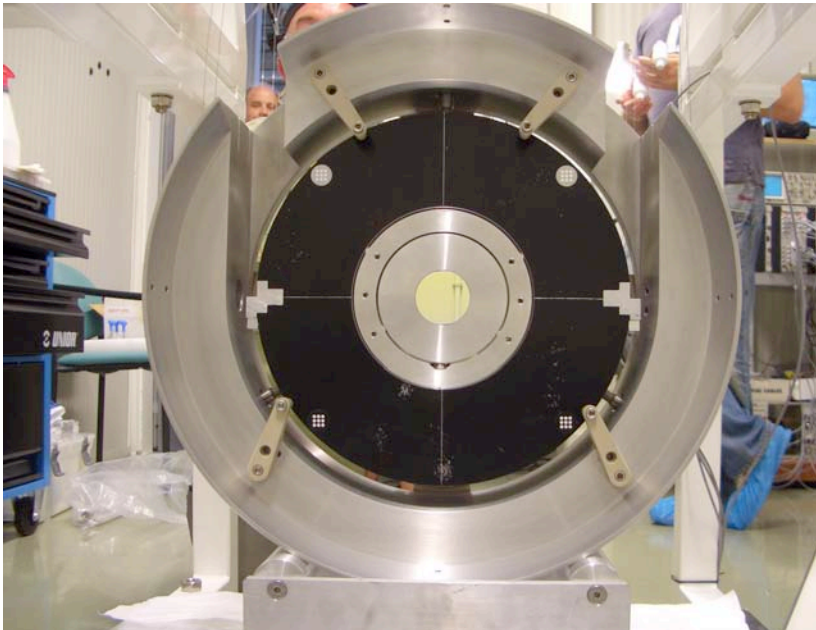


# Last complete Suspension (Nov. '08)

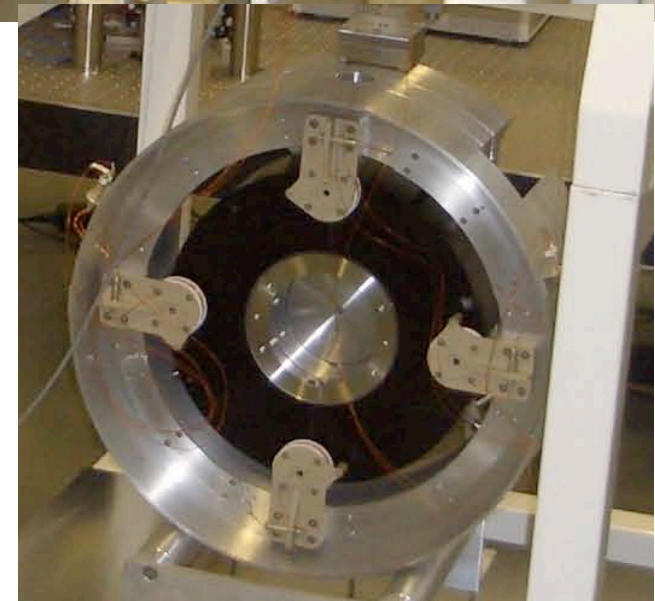
- Fiber production validated
- Implemented the fiber welding with the laser on the lower and upper silica clamps;



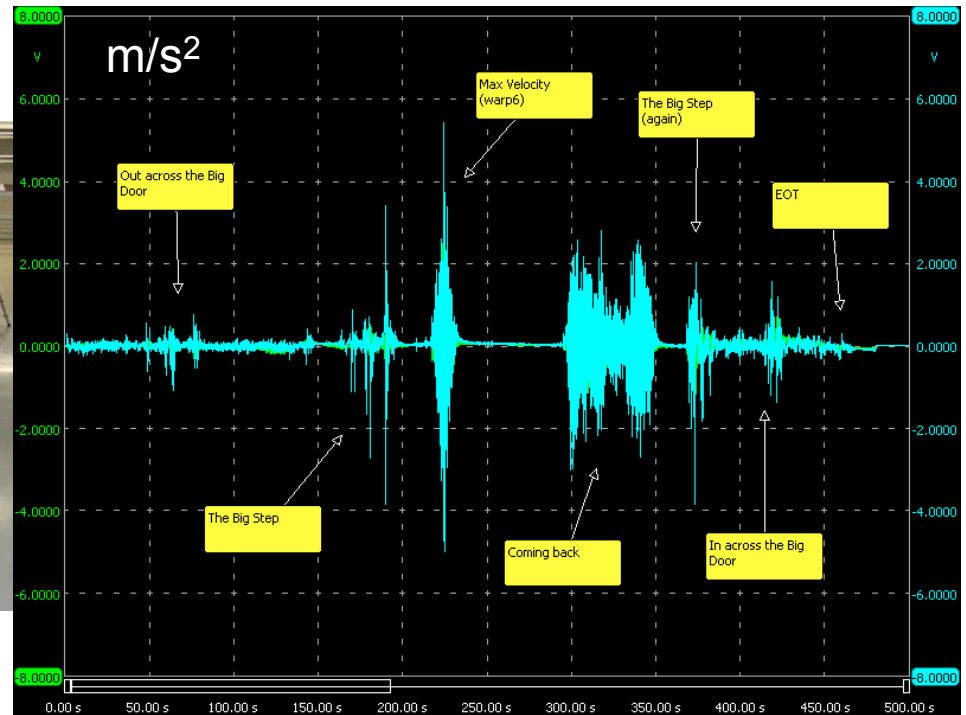
# Payload Suspension



- **Steel AISI304 Marionetta prototype with PVC arms**
- **Dummy reaction mass, coils with peek supports**
- **A mirror is inserted in the holder, and the system is balanced.**
- **All the pieces are secured by safety structures Fibers bending point placed on the marionetta's center of mass**



# July '08 - Shocks, Dust and Humidity tests



## Transportation test (Fi, Pg, Rm with EGO support):

- × On the dummy payload
- × Mechanical vibration monitored with accelerometers
- × The test was successful (no broken fibers! until January 2009: see next transparency);

## Jan. '09 - Shocks, Dust and Humidity tests



**Equivalent weight of the mirror is 70 kg at the moment of breaking**

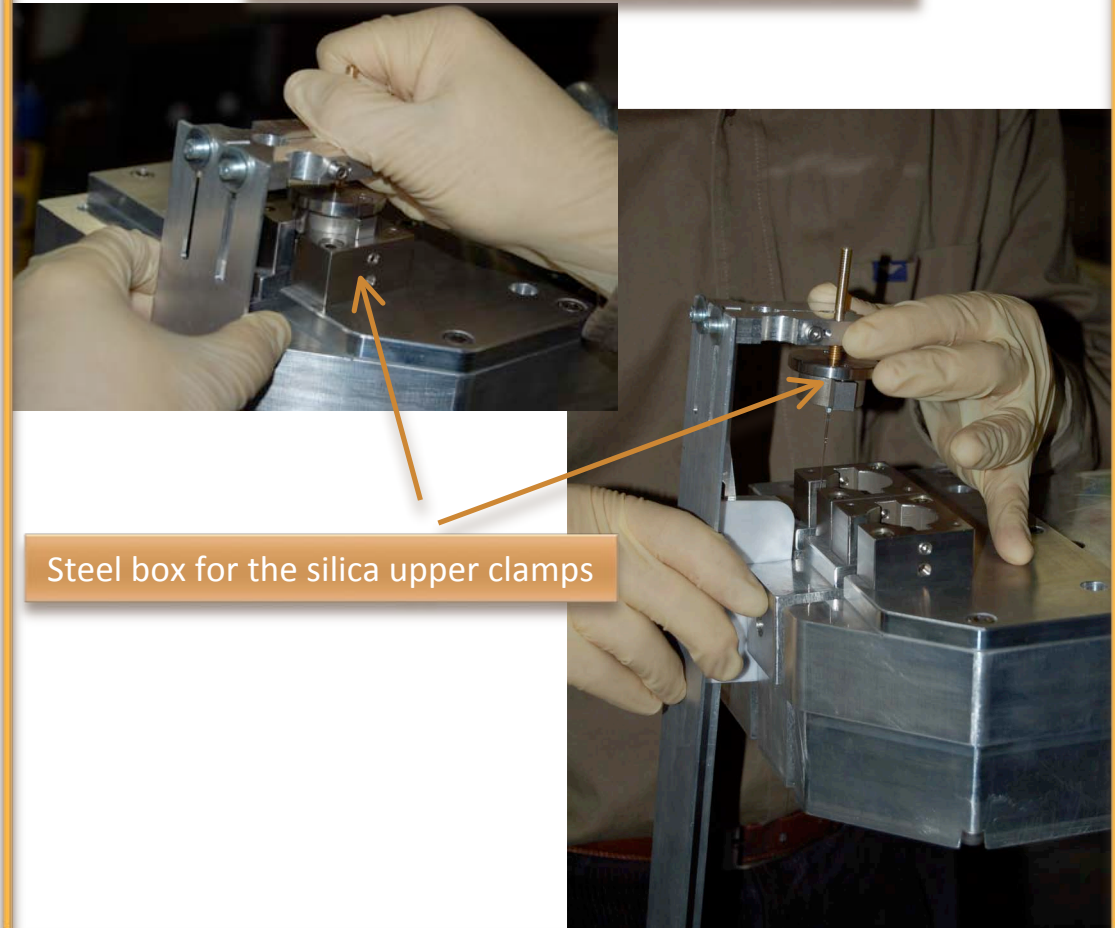
# Feb. '09 - Dummy suspension for losses measurements

- Dummy Mirror suspended in Perugia labs;
- The aim is to measure the wire mechanical losses with the new clamping system;

Dummy payload and C tool



Silica wires installation on the marionette



Steel box for the silica upper clamps

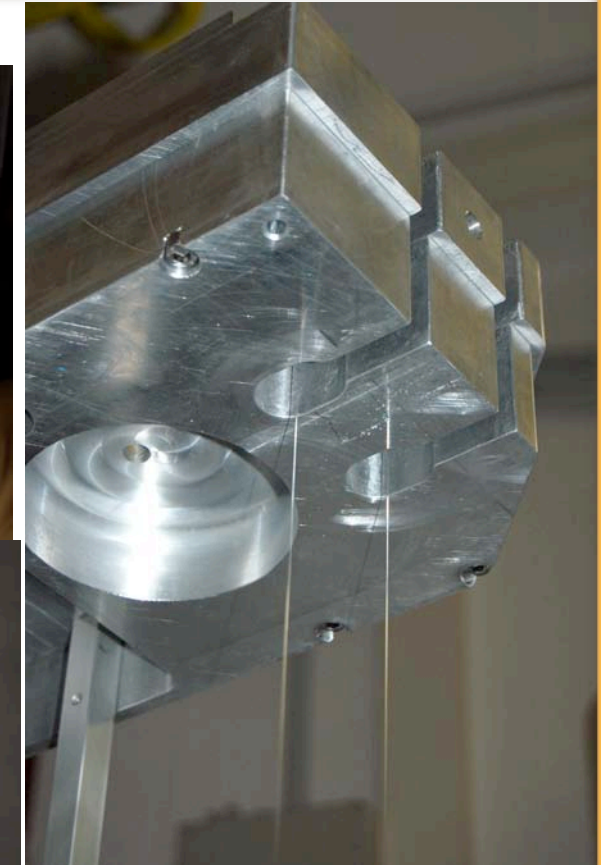
# Feb. '09 - Dummy suspension for losses measurements

- The anchors are glued with water glass on the ears
- The upper clamps are tightly clamped on the dummy marionette

Silica wires installation on the mirror



Silica anchors glued on the ears

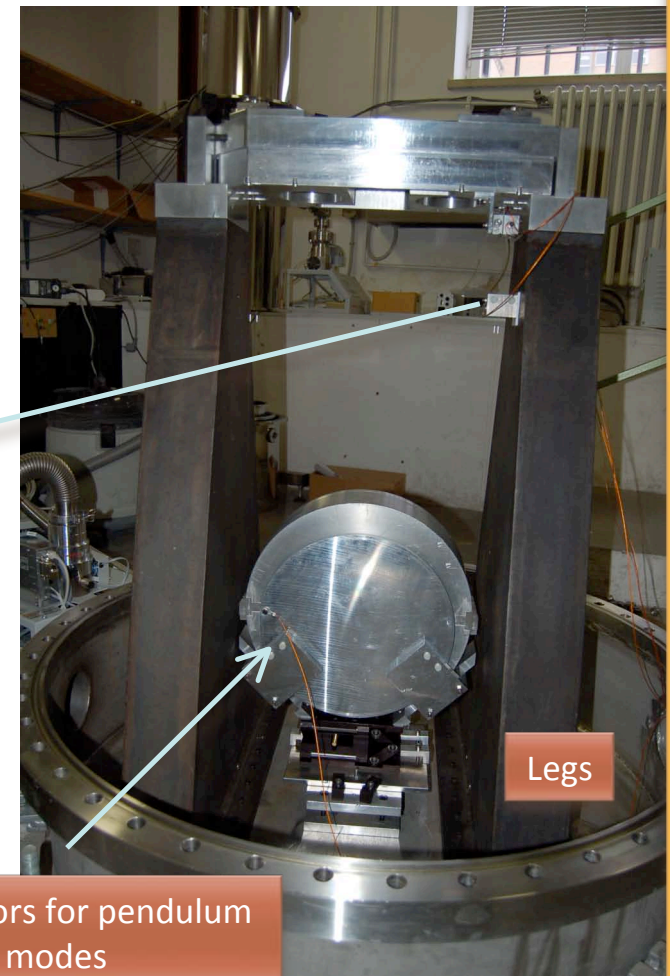
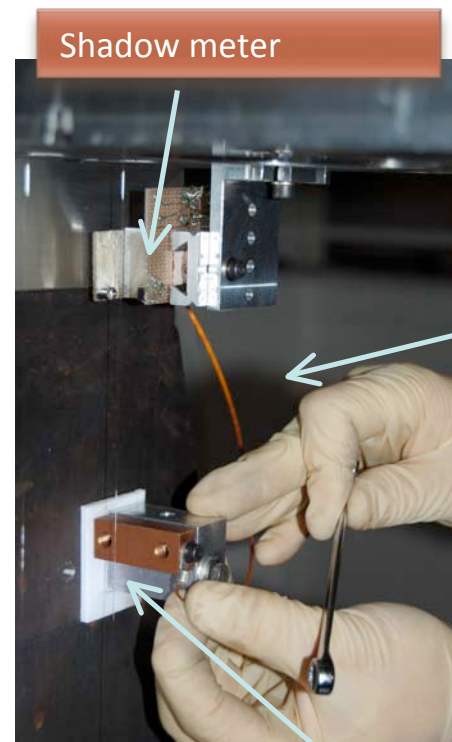




# Feb. '09 - Dummy suspension for losses measurements

- The assembled system is positioned on very stiff legs attached to the ground to decrease recoils;
- Measurements are ongoing: **currently the measured  $Q$  is  $4 \cdot 10^6$  which is the expected value for the structure recoil losses (at this level we are not dominated by excess losses!!!)**

Dummy payload installation in the vacuum chamber



ES actuators for pendulum and violin modes

## NEAR FUTURE ACTIVITIES:

- Clean room at 1500W for cleanliness improvement in April 2009;
- LC: Implementation of the sensing on the Mirror Reaction Mass lateral side
- Measurement ongoing for the mechanical losses both on the wires and silicate bonding (set up ready);
- Final design of the assembly structure;
- Payload production: marionettes and reaction masses should be ready in October 2009.