# LSC Six-Month Progress Report

**Organization** Department of Chemistry and Physics at Southeastern Louisiana University (DCP/SLU)
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a) Construction of SOS and LOS e2e boxes

In the last period, we confirmed the validity of e2e optic's suspension box using a model pendulum we set up on the campus of SLU. We also confirmed that e2e box we made to simulate LIGO large optic (called the LOS box) showed good agreement with measurement in the free hanging mode. This time we incorporated the local damping control mechanism into the LOS box. We also made an e2e box to simulate LIGO small optics (the SOS box) with the local damping servo incorporated. We gave estimated table top motion to these boxes and compared the calculated optic's motion with measurement under various local damping gain settings. Preliminary results show that the calculated and measured optic's motion are close to each other, indicating that the estimation of the HAM table motion was reasonable.

b) Measurement of LLO corner station floor motion

We recorded the seismic motion at various places in the corner station of the Livingston Observatory. The results were given to the numerical simulation group in the LIGO Laboratory at Caltech. The numerical simulation group at Caltech used this data to calculate the floor correlation in the core optics in SimLIGO (the e2e simulator for the LIGO I detector).