

Abstract Submitted  
for the SES11 Meeting of  
The American Physical Society

**Ring Heater for Advanced LIGO** ERIC DELEEuw, GIACOMO CIANI, GUIDO MUELLER, University of Florida — The Laser Interferometer Gravitational-wave Observatory (LIGO) is currently being upgraded to Advanced LIGO. One of the main changes is the increase in input laser power from 30W to 165W. In Advanced LIGO up to 600kW laser power will circulate inside the interferometer. Some of the power will be absorbed by the LIGO test masses, creating a thermal gradient that will deform them changing the spatial mode of the laser field inside the interferometer. Radiative ring-shaped heaters will be installed close to the test masses to provide additional heat to counteract this effect and minimize the deformation. In this talk we will present the proposed University of Florida ring heater design, and measurements of the thermal profile homogeneity to be compared with initial requirements. In addition, we present initial results of outgassing measurements to qualify our ring heater for use in the LIGO vacuum system.

Eric Deleeuw  
Univeristy of Florida

Date submitted: 24 Aug 2011

Electronic form version 1.4