Abstract Submitted
for the APR09 Meeting of
The American Physical Society

Search for gravitational-wave burst counterparts to gamma-ray bursts using data from the fifth LIGO science run and the first Virgo science run ISABEL LEONOR, University of Oregon, LIGO SCIENTIFIC COLLABORATION, VIRGO COLLABORATION — We present the status of the search for short-duration gravitational-wave bursts (GWBs) associated with gamma-ray bursts (GRBs) detected by gamma-ray satellite experiments during the LIGO science run 5 / Virgo science run 1. This sample consists of more than 200 GRB triggers, most of which were observed by the Swift satellite. The search for GWBs associated with GRBs takes advantage of the known sky position and time of the GRB to construct linear combinations of the data that maximize or minimize the signal-to-noise ratio of a gravitational-wave signal with a given polarization. This allows for both high sensitivity to real gravitational waves and powerful consistency tests for suppressing background noise. We apply these techniques to search for gravitational radiation associated with individual GRBs, and also apply statistical tests to search for a gravitational-wave signature associated with the collective sample.

Isabel Leonor
University of Oregon

Date submitted: 13 Jan 2009 Electronic form version 1.4