

LSC Progress Report

LIGO-M020357-00-M

Organization Inter-University Centre for Astronomy and Astrophysics (IUCAA)

Report Date February 15, 2002 to August 15, 2002

Attachment A

This part of the phase of the project involved implementation of the Extended Hierarchical Search (EHS) algorithm. The analytics had more or less been completed in the previous half-year; there remained a few issues that were required to be sorted out. The main problem we were concerned with was of laying the coarse bank of templates taking into account the following factors:

- (i) the boundary of the deemed parameter space,
- (ii) the rotation of the contours of the ambiguity function in different regions of the parameter space.

The main accomplishment during this period was the designing the algorithm which lays out the tiles with the above constraints.

A paper entitled 'A faster implementation of the hierarchical search algorithm for the detection of gravitational waves from inspiraling binaries' by A. Sengupta, S. V. Dhurandhar and A. Lazzarini is in the final stages of completion. It describes in detail the algorithm.

Moreover, Anand Sengupta on his visit to Caltech began preparing a code along with Peter Shawhan for the EHS algorithm in the LDAS environment. This code will be ultimately tested on E7 and S1 data.