

# LSC Configurations Technical Working Group

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## White paper

### LSC Configurations WG priorities

Split into 3 time frames, synchronised with activities of other technical working groups

Based both on needs and probability of success

### LIGO II near-term goals

- Optimization of the core optical system within the context of the near term program (first up-grade)  
(LIGO/MIT, LIGO/Caltech, UF, GEO)

### LIGO II medium-term goals

- Development of a signal recycling configuration for LIGO II  
(LIGO/MIT, LIGO/Caltech, UF)

### LIGO III research targets

- Development of Sagnac interferometers  
(Stanford)
- Study of squeezing applied to interferometers  
(ACIGA/ANU)
- Design of QND systems  
(MSU, CaRT)

## Group activities

- UF, LIGO/Caltech and ACIGA/ANU are all making considerable progress with bench-top demonstrations of dual recycling/ resonant sideband extraction interferometers
- GEO has demonstrated a fully suspended 30m scale dual recycling interferometer (without arm cavities) operating in broadband and detuned modes
- GEO is starting a major program to develop and test a DR/RSE fully suspended interferometer (10m scale)
- STAIC continues to act as a forum/contact point between all workers developing DR/RSE interferometers (Software exchanges and comparison tests etc.)
- Most programs are progressing at a suitable rate (more detail will be available after the WG meetings and when 6 month reports are available)

## Agenda for group meeting

- White paper corrections & comments  
(errors, up-dates etc.)  
Timescale check and revisions
  
- Reports on group activities  
(new results)
  - Near-term LIGO II program
  
  - Medium-term LIGO II program  
(DR/RSE)
  
  - LIGO III research activities
  
- New activities and priorities

STAIC II will occur shortly after this meeting, the focus will be on the core Medium term LIGO II goals.