

## Advanced LIGO Quad Noise Prototype MATLAB model, December 2006

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13<sup>th</sup> December 2006

### T060284-01-R

**Note: This is a revision 01 of this document and supercedes rev 00.** The parameter file “quadopt20060914noiseTLv2.m” included in the file package rev 00 was not set up correctly to run the quad reaction chain models with wires instead of ribbons. Thanks to Mark Barton for spotting this.

The zip file T060284-01-R which goes with this note includes all the MATLAB files necessary to run the most recent version of the quad suspension noise prototype model (in MATLAB version 7) produced by Mark Barton. It includes the most up-to-date version of the program and parameters as posted on Mark Barton’s suspension page which can currently be found on a link from the LIGO e2e page at

<http://www.ligo.caltech.edu/~e2e/>

It is posted there as

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**12/13/06: [20061213\\_T060283-02](#)** (a.k.a. [T060284-01](#)). Suite of models for ITM/ETM, compensation plate, and ETM reaction mass using parameters from T060283-02. This package can also be found on the DCC as T060284-01.  
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There are several new parameter files which were not included in the previous posting on Mark’s page dated 09/14/06.

These are as follows:

- a) quadopt20060914noiseTLv3.m
- b) quadopt20060914noiseTLv3CP.m
- c) quadopt20060914noiseTLv3ERM.m

a), b) and c) all contain parameters sets for an ETM/ITM main chain, an ITM reaction chain and an ETM reaction chain, but with different lines commented out.

a) is set up to run the ETM/ITM main chain

b) is set up to run the ITM reaction chain with CP as bottom mass

c) is set up to run the ETM reaction chain with the ETM reaction mass, called ERM, as bottom mass.

When running the suite of programs you can chose which parameter file to use by opening the quadopt.m file and uncommenting the appropriate line.

These parameter files have been used to obtain the results given in the following REVISED document (version 02)

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Note on Design of the ETM Reaction Chain and ITM Reaction Chain in Advanced LIGO

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13th December 2006

LIGO DCC T060283-02-R  
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