

**Subject:** Re: suspension flats

**From:** Norna Robertson <norna@fastloki.stanford.edu>

**Date:** Mon, 15 Dec 2003 10:07:08 -0800

**To:** GariLynn Billingsley <Billingsley\_G@ligo.caltech.edu>, Peter Fritschel <pf@ligo.mit.edu>

**CC:** janeen@ligo.caltech.edu, calum Torrie <ctorrie@ligo.caltech.edu>, Helena Armandula <ahelena@ligo.caltech.edu>

Gari

I dont at present see a problem in principle, from a mechanical suspension point of view, with having the suspension flat area only in the centre of the barrel. However one should consider the issue of the Q as you say. And i also note that the ear designers are considering a wider spacing of the two suspension fibres - up to 4 cm apart. Thus the width of the flat area would need to be significantly larger than this to ensure a lambda by 10 area in central region - so not sure how much one would save.

Janeen - this idea could be raised for discussion at a suspension telecon, and/or Helena's ribbon/fibre telecon.

Cheers  
Norna

At 10:45 AM 12/13/2003 -0800, GariLynn Billingsley wrote:

Machining and polishing would be difficult. We'd have to look at what it does to the Q.

From an optics standpoint it's not impossible, I'm copying Janeen and Norna so that they can answer from a suspension standpoint.

J&N, we're trying to address the issue of whether SUS can go to a 10cm flat on the sides of the test Masses.

G

At 02:47 PM 12/12/2003, you wrote:

Gari,

is there any reason that the suspension flats have to span the width of the barrel? If they were just in the center of the barrel, then they would have a much smaller impact on the loss, and they could be longer.

PF

Dr Norna A Robertson  
Edward L Ginzton Laboratory, Room 275  
Stanford University  
450 Via Palou  
Stanford  
California 94305-4085  
USA

Tel 650 723 0228  
Fax 650 723 2666  
e-mail: [norna@loki.stanford.edu](mailto:norna@loki.stanford.edu)