

## Re: LIGO.

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Tom Roberts wrote:

Joe M. wrote:

Tom Roberts wrote:

When a gravitational wave comes by, those integrals will change (one arm increases in total phase delay while the other decreases), implying that the interferometer output will no longer be nulled.

Is the phase delay measured by the spatial displacement of interference fringes, or pulse time delay?

Basically the former. But the actual detector is more complicated; go to <http://www.ligo.caltech.edu/> and poke around for details.

Tom Roberts

Well this is all very interesting but we still appear to have a non functional, very expensive apparatus here! Michelson and Morley used an old cellar and a relatively simple optical interferometer, in fact they had to cut their programme short because someone else needed the cellar. Perhaps, it being in Dublin, a Guinness delivery was expected. Strange, I always thought that Semantics were to do with the meaning of language, but I suppose that mathematicians are running out of mames for ever more abstruse calculations and logical operations. None of this however more than partially answers my original question. Though I see someone has phrased it quite well– In effect what are you actually measuring and how does propagation speed enter the equation? Electromagnetism had Maxwell, but can Einstein now join his illustrious company or not?

Re: LIGO.

Maxwell of course had the advantage of already knowing the approximate velocity of electromagnetic radiation he did not have to assume it.

BTW how is the nature of the "space/time" positioning of the light paths determined? Or is it assumed that space is substantially "flat" and unstressed around the mirrors?

I presume that ant "directional" information depends on the time delay of signals and therefore the velocity of propagation, but I stand to be corrected on that.

I fully understand that Einstein's original work as regards "gravitational radiation" has been much "worked on" since his death 50 years ago, but his name keeps coming up.

One day we may get to the bottom of this gravity well !

Regards Cliff Wright.

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