

Re: On The Measurement Of Speed

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- *From:* The Ghost In The Machine <ewill3@xxxxxxxxxxxxxx>
 - *Date:* Mon, 29 May 2006 22:00:18 GMT
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On Mon, 29 May 2006 14:00:33 +0000, kenseto wrote:

"The Ghost In The Machine" <ewill3@xxxxxxxxxxxxxx> wrote in message news:pan.2006.05.28.21.50.52.356417@xxxxxxxxxxxxxx

Herewith several problems for the assemblage --- you know who you are.

[1] I travel from Atlanta to Boston, then back to Atlanta. Assuming 2200 miles total [*] and 44 hours driving time (not counting stops for lunch and sleeping), how do I calculate my average speed?

[2] A friend travels from Chicago to Detroit, meets a friend there, then travels back. Assuming 280 miles and 5 hours, 36 minute driving time (not counting stopping for lunch with said friend), how do I calculate his or her average speed?

[3] A light beam travels along a straight path of length 1 km, reflecting off a mirror at the far end, and triggering a sensor both when it leaves the laser, and another sensor when it returns. If the sensors are triggered 6.6712819 ns apart, how do I calculate the light's average

speed?

This is great. I assume that the length of 1 km is measured with a ruler (or measuring tape). But sadly the results for such a TWLS measurement doesn't yield a value of TWLS equal to c . That's why they had to define TWLS equal to c by redefining the length of a meter= $1/299,792,458$ light-second.

Ken Seto

<http://www.mel.nist.gov/div821/museum/timeline.htm>

is probably as good as any. Prior to the current definition of $1/299792458$ th of the distance light travels in 1 second (1983), there were a fair number of meter definitions, some of them more accurate than others.

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In any event, one must remember that Atlanta, Boston, Chicago, and Detroit are all *moving* with respect to the E-matrix, the absolute luminiferous aether, the origin of the Universe, the Sun, and/or of course the driver (which for the last is of almost negligible effect).

The prior version of the meter was apparently slightly longer, resulting in a lightspeed measurement of 299,792457.4 m/s.

<http://math.ucr.edu/home/baez/physics/Rela>