

Re: Why does measuring tape bend one way?

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Ken Muldrew wrote:

- > *You may be interested to know that there is a "jam side down"*
- physical
- > *law with respect to measuring tapes. Every measurement where you are*
- > *unable to support the tape easily is just far enough to cause*
- > *buckling. There has never been a demonstrated exception to this rule.*

Interesting. Then perhaps we can devise a kind of "inertialess drive" by trying to measure the distance to a nearby object with stiffer and stiffer tapes, causing the object to recede with zero momentum in the reference frame. Of course it may be objected that the distance to the object only exists when we measure it, otherwise presumably having an imaginary value; in this way the sums of squares and hence RMS distance is enabled to remain constant while the series of lower bounds given by the buckling lengths of the unsupported tapes grows without bound, proving that the object is receding on a right circularly polarized light cone, rolling on the herpolhode. By transforming in the complex momentum plane and continuing to roll right round the pole, we can see that the apparent velocity actually lies on a non-positive infinitesimal casual generator, which is equivalent to measurements of a second series of tape measures moving *_backwards_* in time. In fact, it may be considered that there is only a single tape measure with many branches, so the causality really works out OK, although at first glance it may seem paradoxical.

This simple point trips up many tyros, and causes a lot of unnecessary argument, though it's hard to imagine how anybody could be confused once you see the trick!