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Athletic Track Nonsense

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We are in the midst of a remarkable season for athletic track events. Already 100m world record has been broken by 0.01sec while the 10,000m world record is now 26mins 52.23seconds. Presumably a runner who completes the 10,000m in 26mins 52.22seconds will be judged to be the new world record holder. I suggest that measurements of track events to 0.01seconds is a nonsense and there is a need for the time measurement to be commensurate with the errors associated with the several variables and assumptions involved in such measurements that should be familiar to any scientist.

A 10second 100m runner covers 10cm in 0.01seconds while a 10,000m runner covers just over 6cm in the same time. The winner is determined by detection of the intersection of a part the body from the torso to neck with the finish line. A wind assistance of less than 2m/sec is permitted. It is highly unlikely that the length of the 10,000m track can be measured with an accuracy to anything like 6cm. Even thermal expansion of the track will produce comparable errors. For a 25 lap 10,000m race an error of 6cm corresponds to a systematic error of 2.4mm in the distance for one lap.

It is assumed the athletes respond instantaneously to the starter's signal, a very doubtful assumption. Within the margin of 0.01seconds some of the athletes may have anticipated the starter's signal and already covered several centimetres.

I would suggest it is unrealistic to attach any significance to differences in timings of 0.01seconds. I would suggest that it is probably unrealistic to quote 100m results to better than 0.1second and for the 10,000m race to better than 1second. In the latter case the uncertainty may even reach a few seconds.

I do not believe there is any scientific significance to be attached to the claim that the new 100m world record holder ran faster than his predecessor, indeed he may even have been slower.