

Translation into English: [Chapter 2 - Catalogue of Errors for Both Theories of Relativity](#)

from the German documentation of G.O. Mueller

"*On the Absolute Magnitude of the Special Theory of Relativity - A Documentary Thought Experiment on 95 Years of Criticism (1908-2003) with Proof of 3789 Critical Works*" - Text Version 2.1 - June 2004  
<http://www.ekkehard-friebe.de/kap2.pdf>

Translator: Rothwell Bronrowan

© Copyright Ekkehard Friebe – Oct. 2012

---

## E: Motion / Error No. 11

**Length contraction, which was introduced by FitzGerald and Lorentz as a hypothesis only and was first presented by Einstein in the STR as a reality, has still not been observed after more than 100 years**

*Length contraction was introduced by FitzGerald and Lorentz explicitly as an ad hoc hypothesis to explain the supposed null result of the Michelson-Morley experiment. It was also introduced in the context of the ether hypothesis. Lorentz was unable to report an observation of length contraction, in keeping with that of his theory.*

*Albert Einstein and his successors maintain that length contraction is a real effect, without any use being made of an ether hypothesis. This real effect, too, could not be observed in the intervening 100 years and more. - There is therefore no occasion to present length contraction as a proven effect of the STR. As a consequence there is in particular no justification for the qualification that the STR is the "best-proven theory of physics".*

The failure to observe length contraction is hardly surprising, when one analyzes its derivation in AE 1905. Albert Einstein's approach in developing his theory is very remarkable. First of all he asserts the division of the concept of time with the introduction of solely locally valid times. Then he maintains the invalidity of simultaneity for distant clocks and occurrences in relative motion, whereby the limitation of the validity of time is fixed. And after he has divided and relativized the physical concept of time in this way, he applies this concept of time and clocks (!) for measurement of the length of the rigid rod. With an already relativized time the deduction of a relativized length is then no big deal.

In the line of argumentation for length contraction Albert Einstein makes use of a similarly convoluted method to that used in the derivation of the constancy of  $c$  (Error B 2). In AE 1905, p. 895, the paragraph title announces the relativity of lengths. On pp 895-896 a thought-experiment setup is described, though the decisive measurement is *not* yet undertaken. Only the results one would find are announced: "The ... length to be found ... will be determined on the basis of our two principles, and we will find that it is different from  $l$ " (p. 896). In other words, length contraction has at this stage by no means been justified, but its derivation has been announced. Next, with the experimental setup for length contraction, quite surprisingly, time dilation is first proven (see Error B 2) - with a not-yet-contracted rigid rod, by the way. On pages 897-901 there is then no further mention made of contraction. The Lorentz transformation equations are instead developed; and the contraction of lengths is then derived from these transformation equations on pp 902-903 - and not from the experimental setup of pp 895-896! Since the transformation equations (identical to those of Lorentz) already contain the contraction, it is no wonder that Albert Einstein can deduce a contraction. The rabbit is already under the top hat. Again Albert Einstein works on the assumption that the reader is unable to retain an overview of 11 pages of text and will not notice the trick. Such trick results are, however, punished by nature through non-recognition.

The peculiar derivation of length contraction from time dilation is repeatedly established in the literature, e.g. Browne (1977, p. 734): "Length contraction in special relativity is a direct consequence of the relativity of simultaneity (as indeed are all relativistic effects)."

Some particularly forgetful, but eager relativists even arrive at the conclusion that the *real* length contraction of the STR is proof of the null result of the Michelson-Morley experiment - to explain which it was initially introduced as an ad hoc hypothesis.

AE 1905. - Browne, Peter F.: Relativity of rotation. In: Journal of physics. A. Ser. 2, Vol. 10. 1977, pp 727-744.