

Calculating the Mean Lifetime of the Muon

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1 Theory

1.1 About the Muon

The muon, or the μ -meson, is a subatomic particle created in cosmic ray interactions with matter. A common source of muons is cosmic ray interactions with the earth's atmosphere; although these unstable particles have very short lifetimes, the relativistic speeds at which they travel allow them to reach and penetrate the earth's surface before decaying. Muons arrive on the earth's surface at the rate of 10,000 particles per square meter per minute. [1]

1.2 Calculations

More text.

2 Laboratory Setup

2.1 Apparatus

References

- [1] Wolverson, Mark. September 2007. "Muons for Peace: New Way to Spot Hidden Nukes Gets Ready to Debut", *Scientific American*; 207 (3): 26-28.