

# Muons and Proper Time

## Physics II: Modern Physics

College of the Atlantic

1. Mount Washington is approximately 1907m tall. What is this distance in SR units? Answer in microseconds ( $\mu\text{s}$ ), where one microsecond is  $10^{-6}$  s.
2. Muons have a half life of  $1.52 \mu\text{s}$ . Suppose at  $t=0$  there are 1000 muons. How many muons would we expect to see after  $6.44 \mu\text{s}$ ?
3. Btw, what is 72 % of 563?
4. Anastajia and Beowulf are hanging out, and Ana decides to go for a quick trip. She gets in her rocket ship and travels exactly once around the earth at a speed of 0.9. (The circumference of the earth is approximately 40,000 km.)
  - (a) How long does the trip take according to Beowulf?
  - (b) How long does the trip take for Ana?