

[mex237] Decay of particle: maximum kinetic energy.

A particle of mass M at rest decays into three particles of masses m_1, m_2, m_3 by releasing a total decay energy ϵ . Assume that mass-energy conversion is negligible ($M = m_1 + m_2 + m_3$) and that the resulting momenta of the decay products are nonrelativistic. What is the maximum kinetic energy T_1^{\max} of the emerging particle with mass m_1 ?

Solution: