1 Two Particles Collide

A particle of mass m_1 elastically collides with a particle of mass m_2 which was at rest (in the lab frame). Find the maximum fraction of the kinetic energy loss for m_1,

$$\left. \frac{T_0 - T_1}{T_0} \right|_{\text{max}}, \tag{1.1}$$

with respect to the deflected angles (in the lab frame). Describe the trajectories in the collision (in the lab frame).

Hints: You may maximize with respect to either deflected angle, ψ or ζ, since they are interdependent. Use results from the text.