

H16.04] Liquid Metals Jets as Targets for a Muon Collider Source

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The high proton fluxes required on the primary target at a future [muon collider](#) make use of a solid target problematic, particularly due to effects of shock heating. We are exploring the merits of use of [liquid metals jets](#) as the target material. Indium-lead-tin alloys are candidate materials in view of their high atomic number and low melting point. The primary target at a muon collider will be surrounded by a solenoid magnet with field of order 20 T to maximize capture of soft pions. The liquid metal jet will be deflected, and possibly dispersed, by its interaction with the strong magnetic field. We present analytic and numerical calculations on the viability of liquid jets as they traverse the magnet.