

MERCURY HANDLING FOR THE TARGET SYSTEM FOR A MUON COLLIDER

(IPAC12, WEPPD038)

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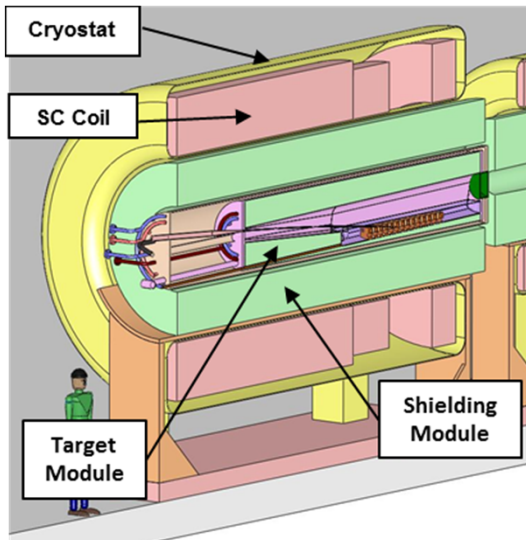
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The target station at a 4-MW Muon Collider or Neutrino Factory will have a target module inside a shielding module inside a 15-20 T superconducting magnet.

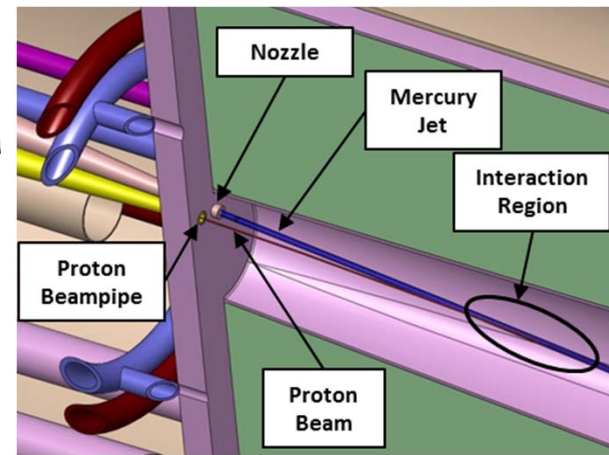
The target itself is a free mercury jet, moving at 20 m/s at an small angle to the magnetic axis, so as later to be collected in a mercury pool/beam dump.

The replaceable target module includes the interaction region and mercury pool inside a primary containment vessel, surrounded by He-gas-cooled W-bead shielding.

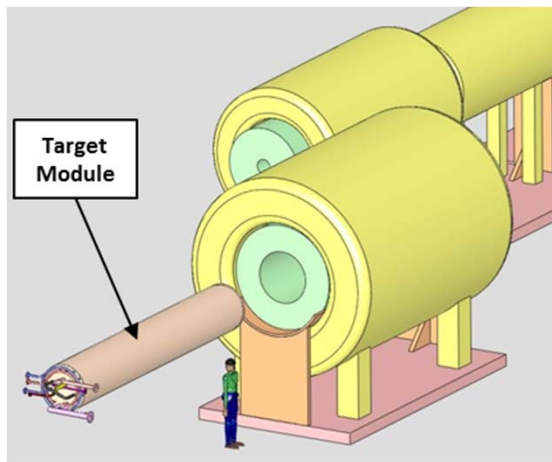
The target system:



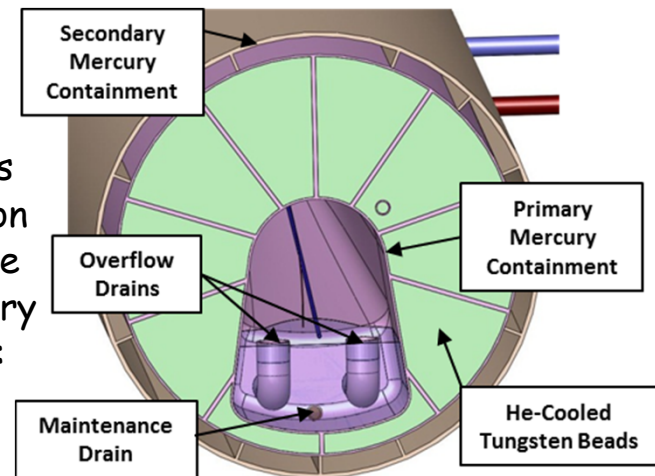
The interaction region inside the target module:



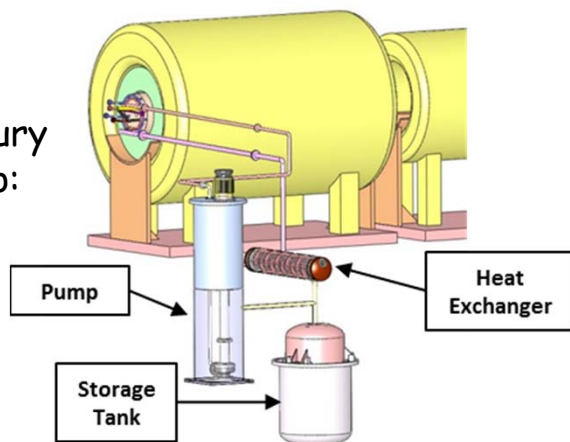
Insertion/extraction of the target module:



Cross section of the mercury pool:



The mercury flow loop:



Services for the target module:

