

ISAC collection station upgrade

requirements from C. Ruiz (email to P. Bricault, Sept 30, 2009)

1. High vacuum - 10^{-8} Torr if possible.
2. LN2 large area cold trap (coil or cylinder surrounding beam axis)
 - > automatic LN2 filling
1. calibrated slow pump and vent rates for thin foils (< 0.5 Torr/s) (vent to N2)
2. Collimator (changeable size) with current readout
3. Easy removal target position (see idea below)
4. Separate from kicker box
5. Visual target diagnostic

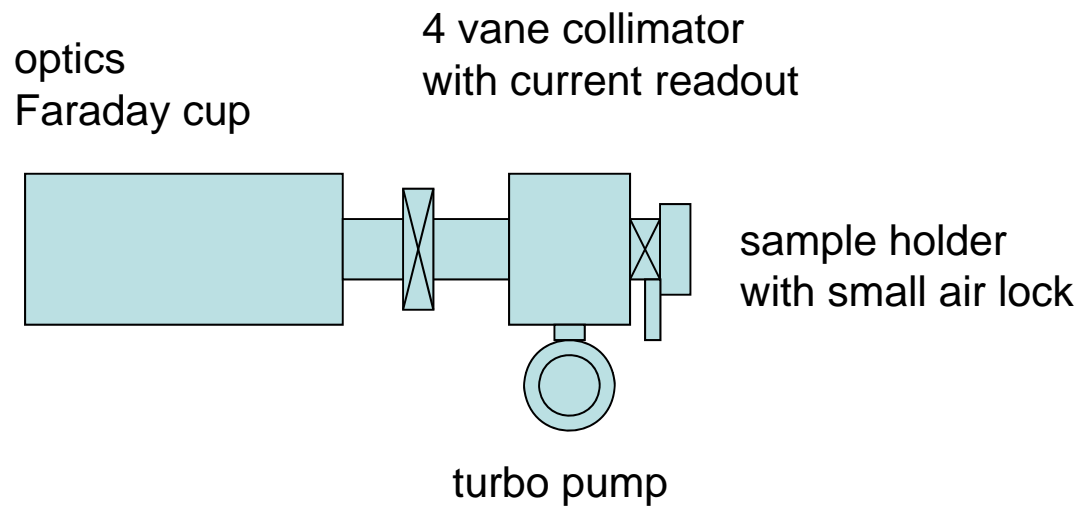
followed by a proposal based on a standard ISAC optics box

problems:

hazard from LN2 handling in mass separator room (no ventilation)

standard optics box is not good for ultra high vacuum

additional optics has to be integrated for better focusing and rastering



2 separate boxes for ion optics and sample
stainless steel vacuum chambers with ISO or CF flanges
cryo or peltier cooler if necessary
only small volume for sample, easy to exchange

cost estimate

turbo pump + scroll pump	25 000
2 valves	3 000
2 vacuum chambers	3 000
vacuum gauge, small parts	4 000
F- cup	500
collimator	500
power supplies 3 quads	6 000
power supplies raster	6 000
total	\$ 48 000

- + controls
- + design office
- + machine shop
- + installation