

Impressions on RHIC Collimation System

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RHIC collimation system:

Responsible: A. Drees

Major concern:

Experimental background

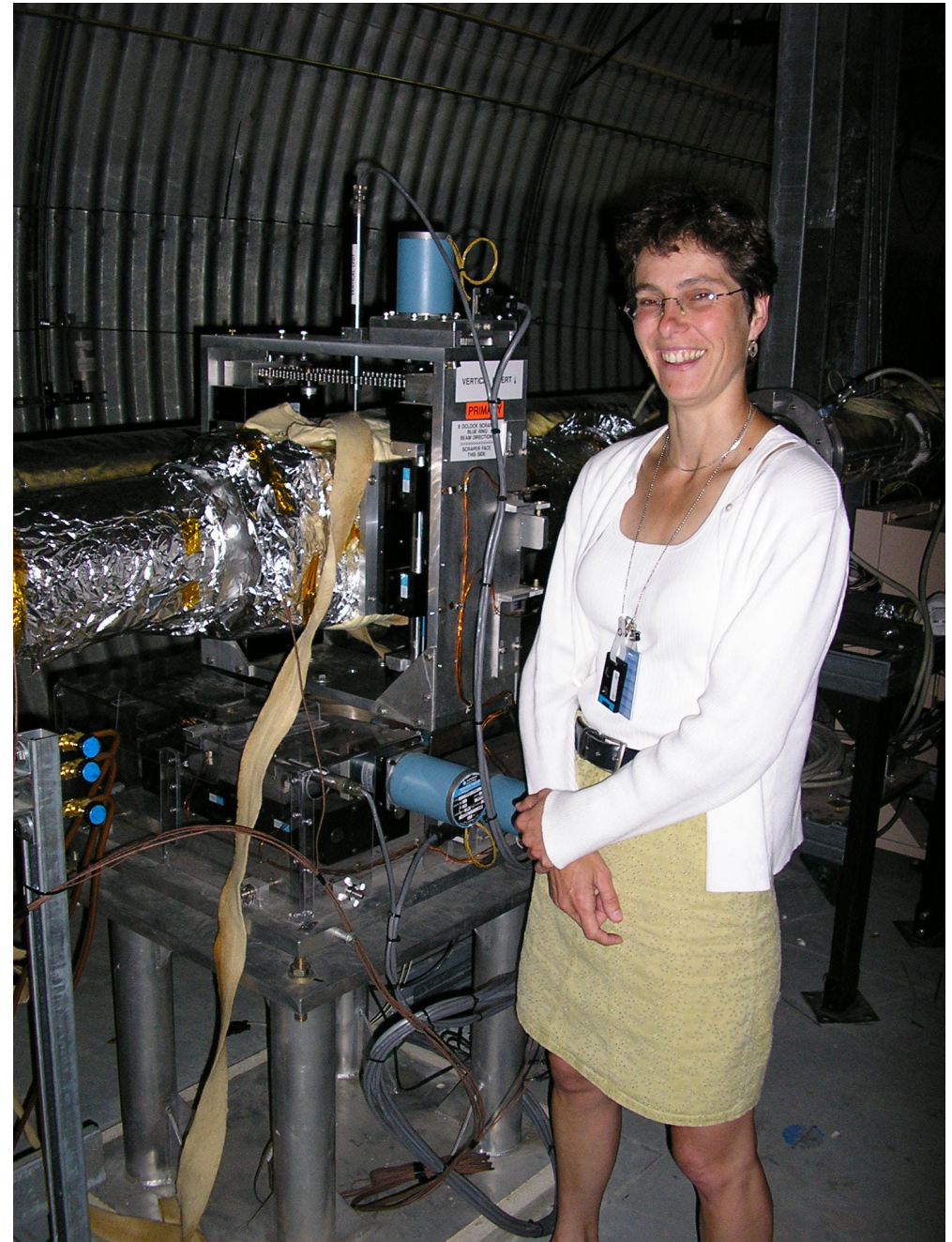
Upgrade to 2 stage system

Upgrade half completed:

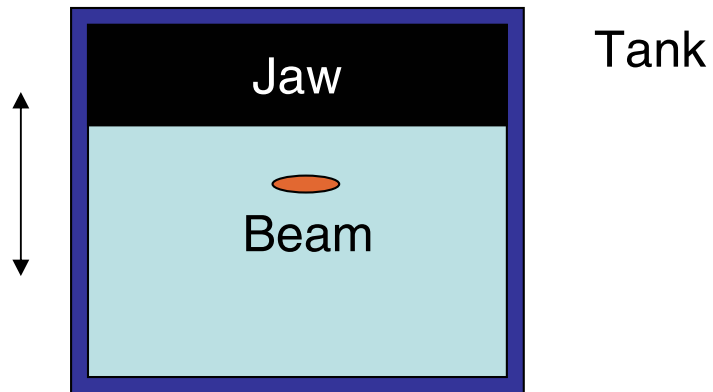
Big reduction in background achieved!

Two-sided collimator: Install two one-sided components!

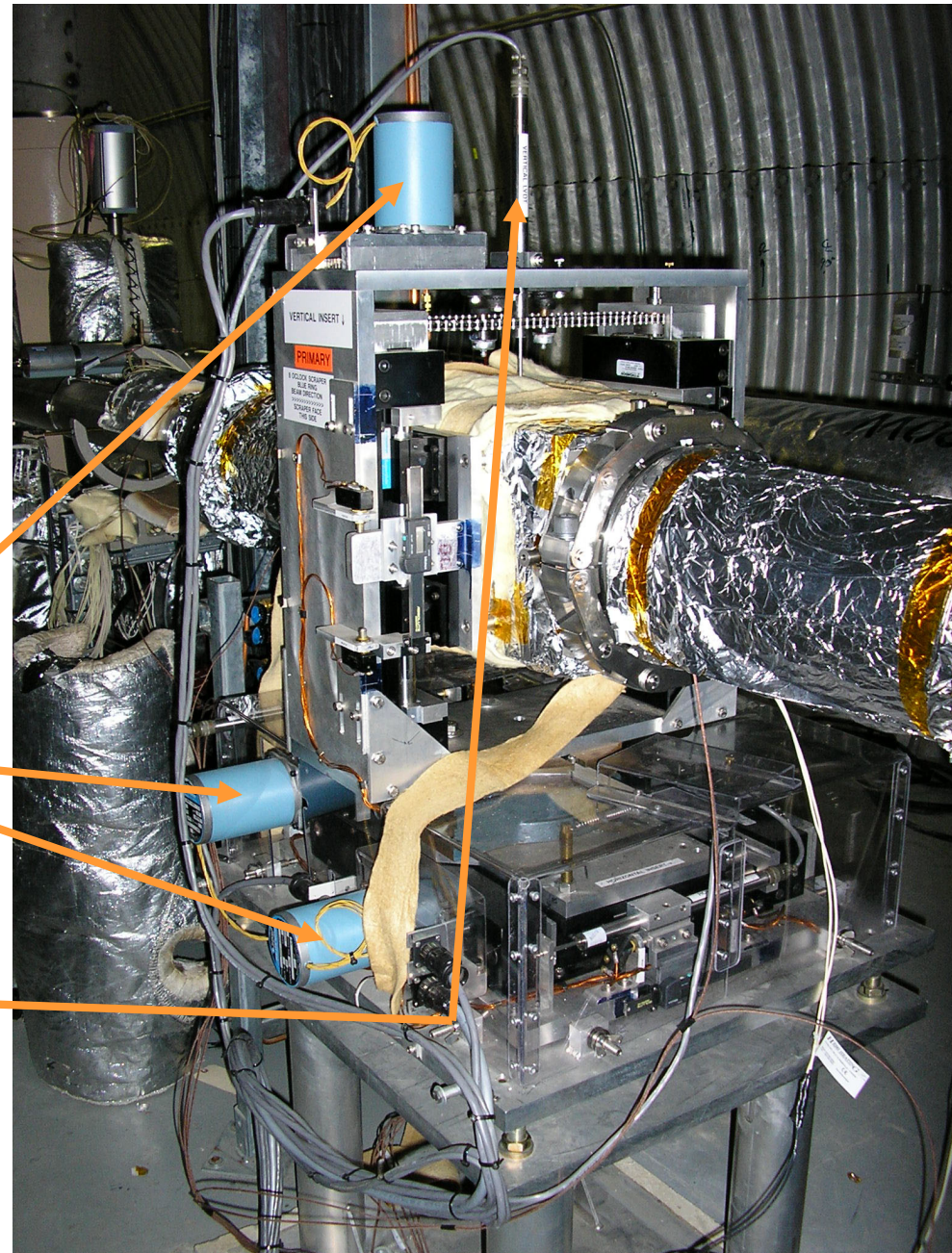
Cost: about twice LHC assumed.



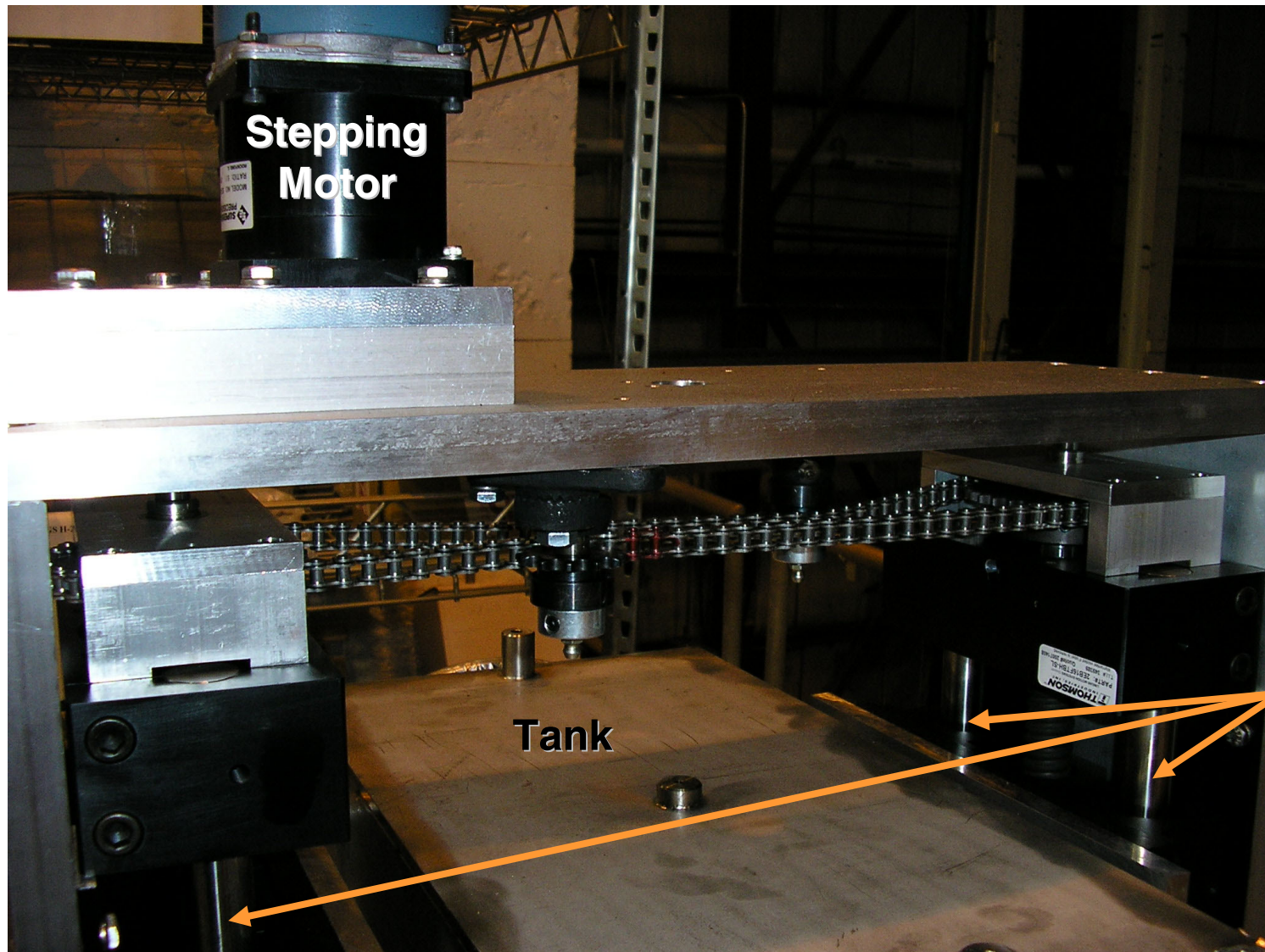
One-sided collimator.
Movements move the whole tank!



- collimation depth with one motor
- 2 angles with two motors?
- long flexible bellows (~80cm)
- diagnostics:
potentiometers
switches
BLM's



Vertical secondary collimator

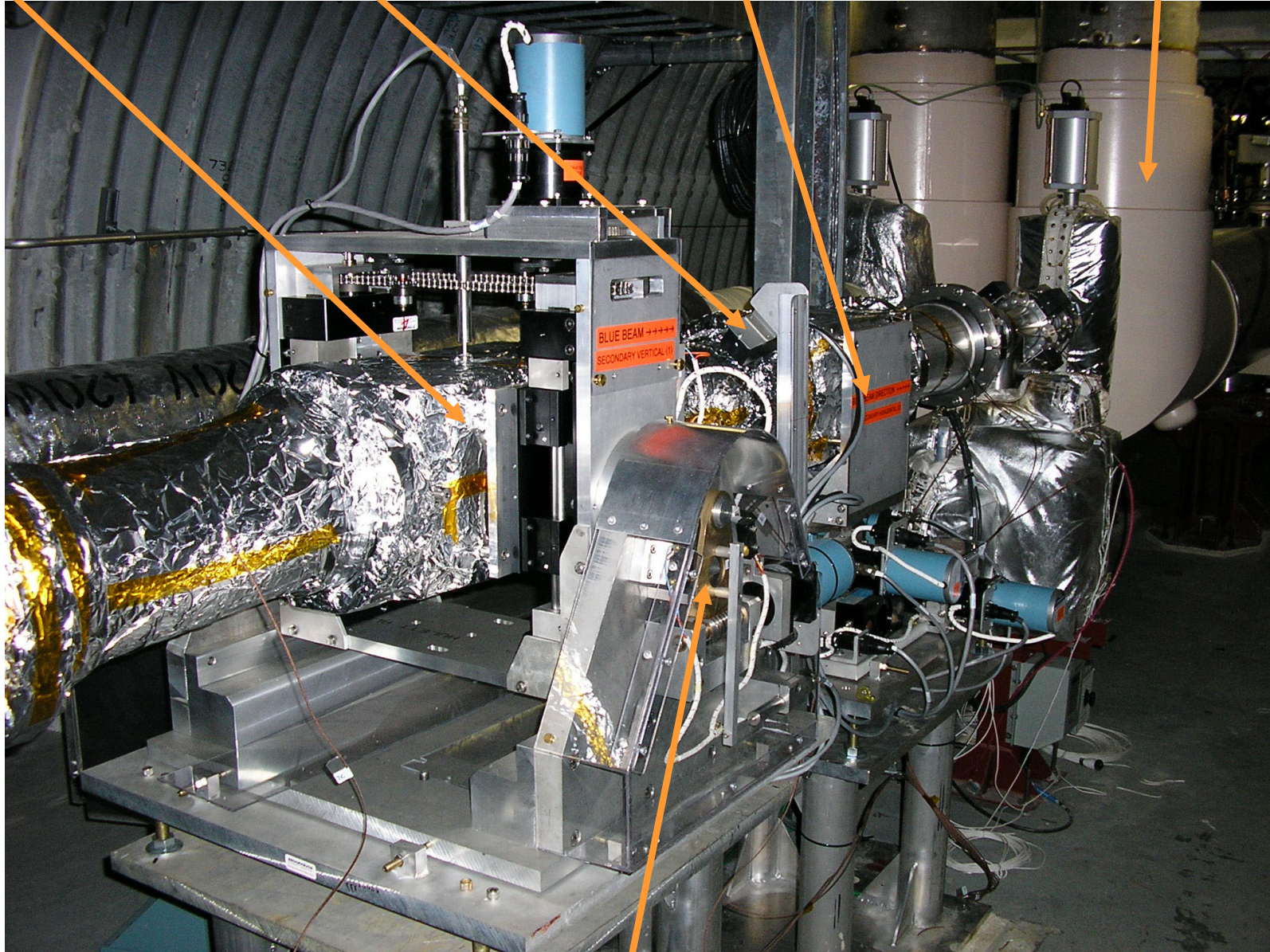


Collimator

BLM's for collimator set-up

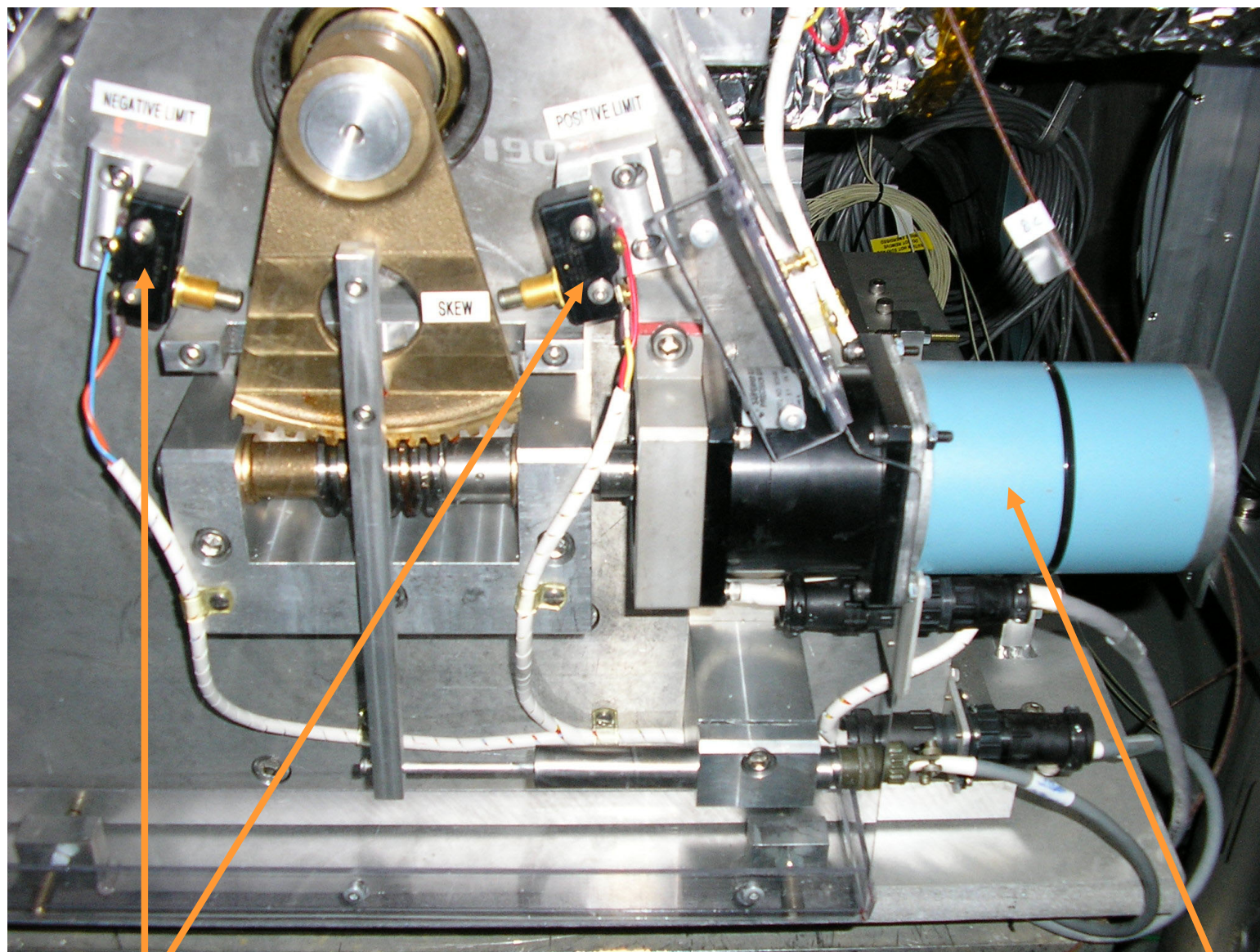
Collimator

Super-conducting line



Switches MIN/MAX

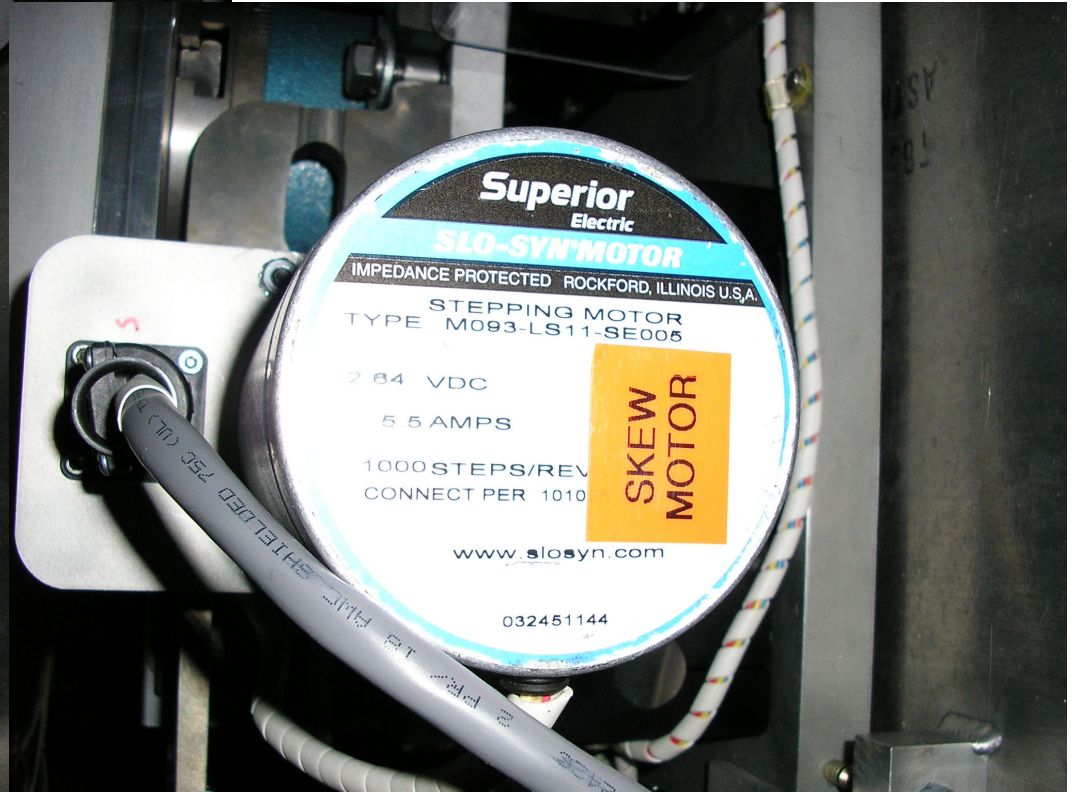
Switches min/max for skew angle:



Switches

Stepping motor

Stepping motor RHIC collimators



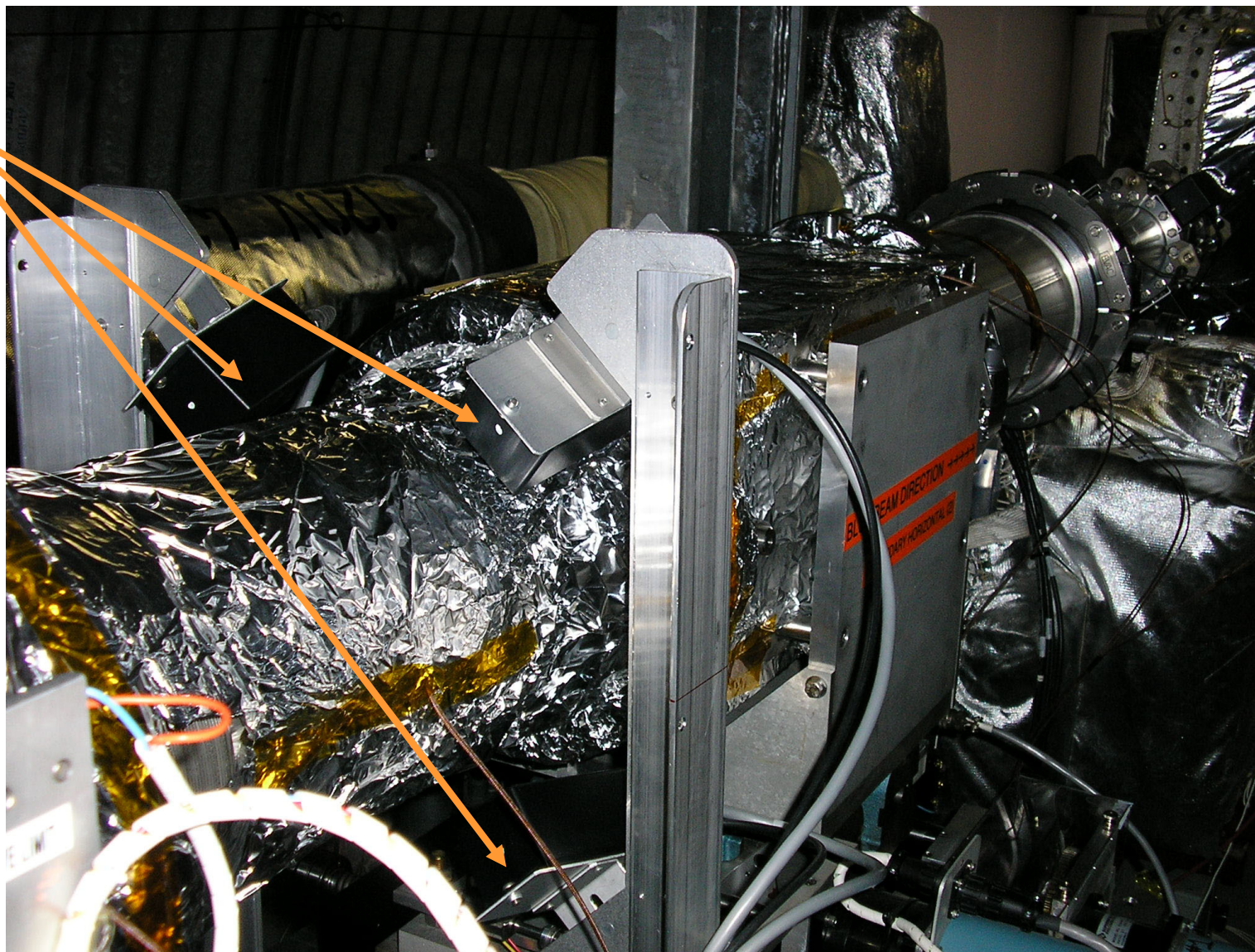
“Integrated” Beam Loss Monitoring – Upgraded in several steps based on experience

4 detectors

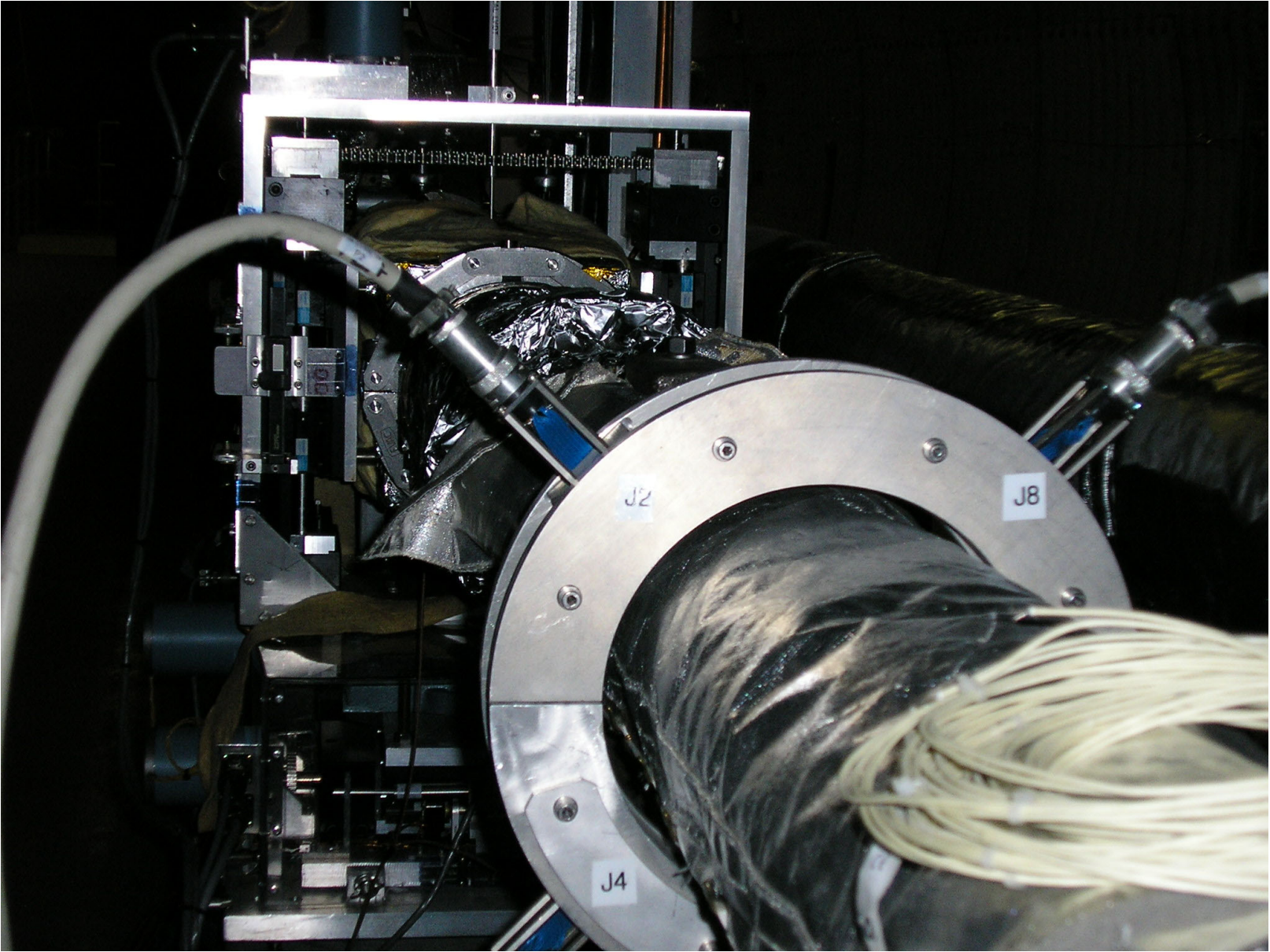
→ 90 degree sampling in azimuth

→ oriented towards shower origin to minimize cross-talk

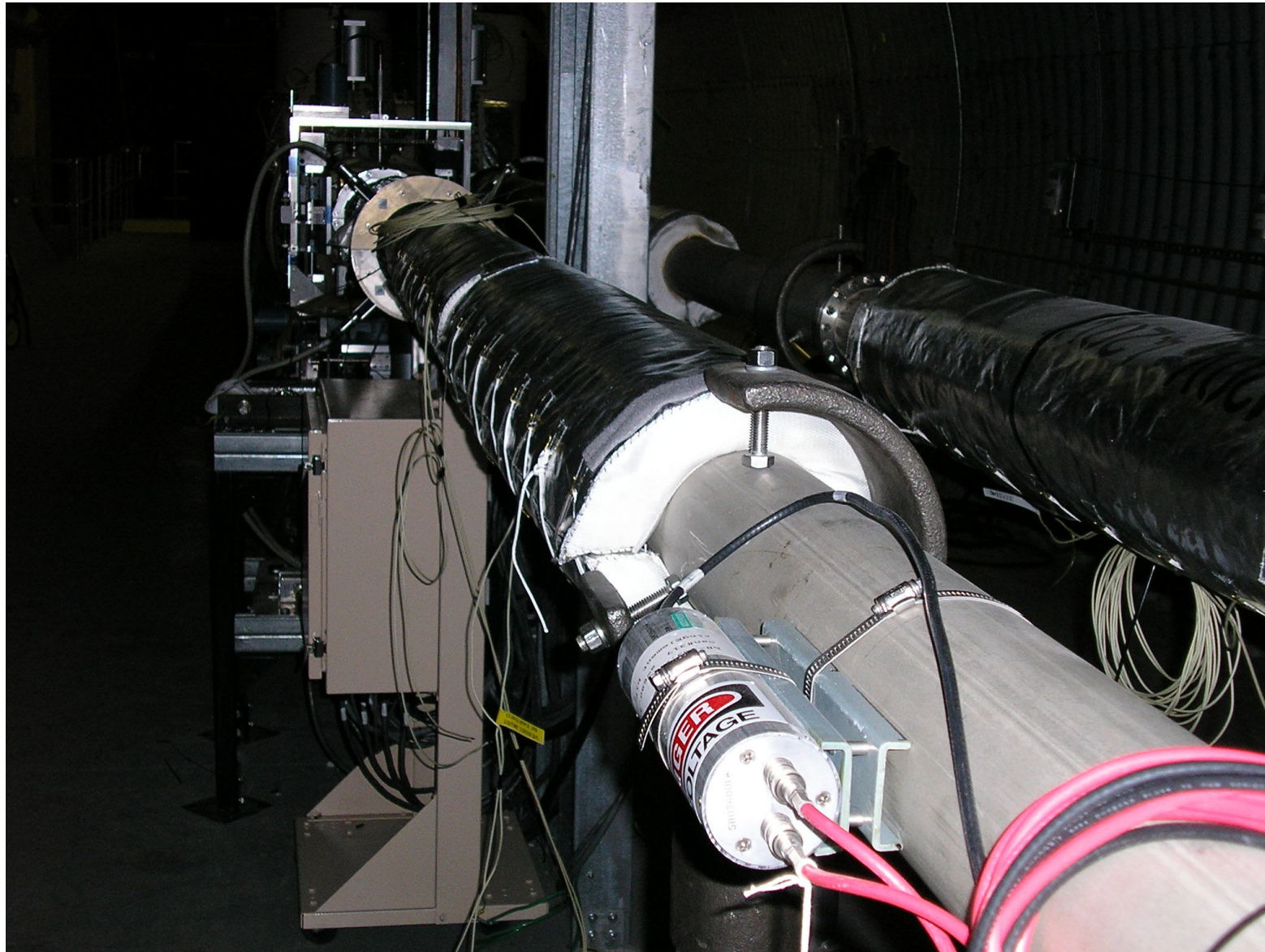
→ set-up based on operational optimization: trial and error in positioning (consistent with safety function?)



Pin diodes for beam loss monitoring used for collimation tuning



Ionization chambers for beam loss monitoring (slowish?)



Ionization chambers for beam loss monitoring at SC magnet (slowish?)

