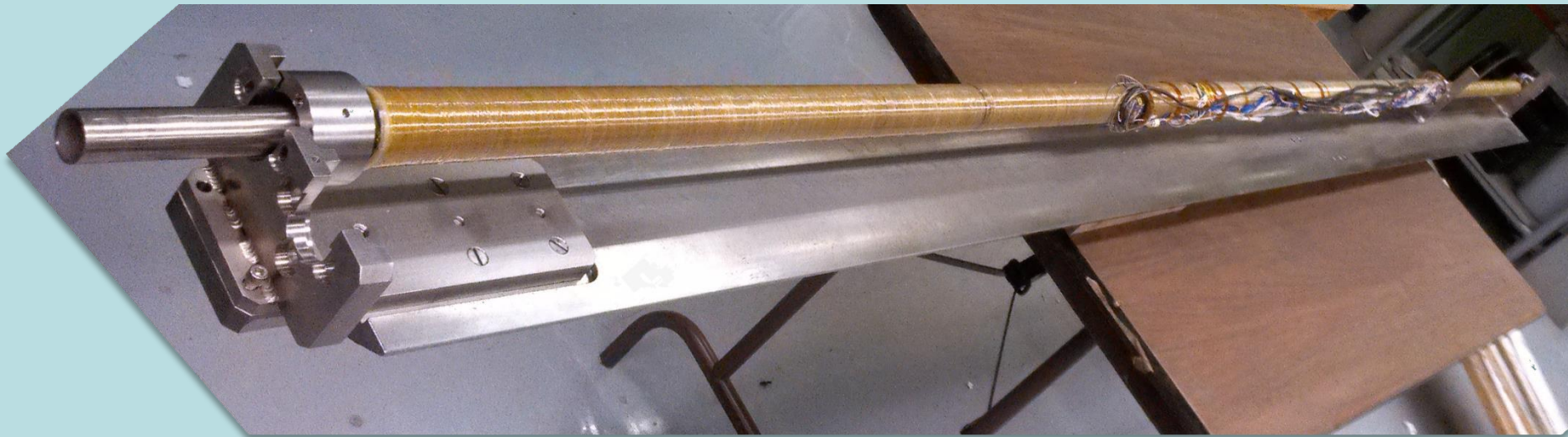


QD0 R&D Update

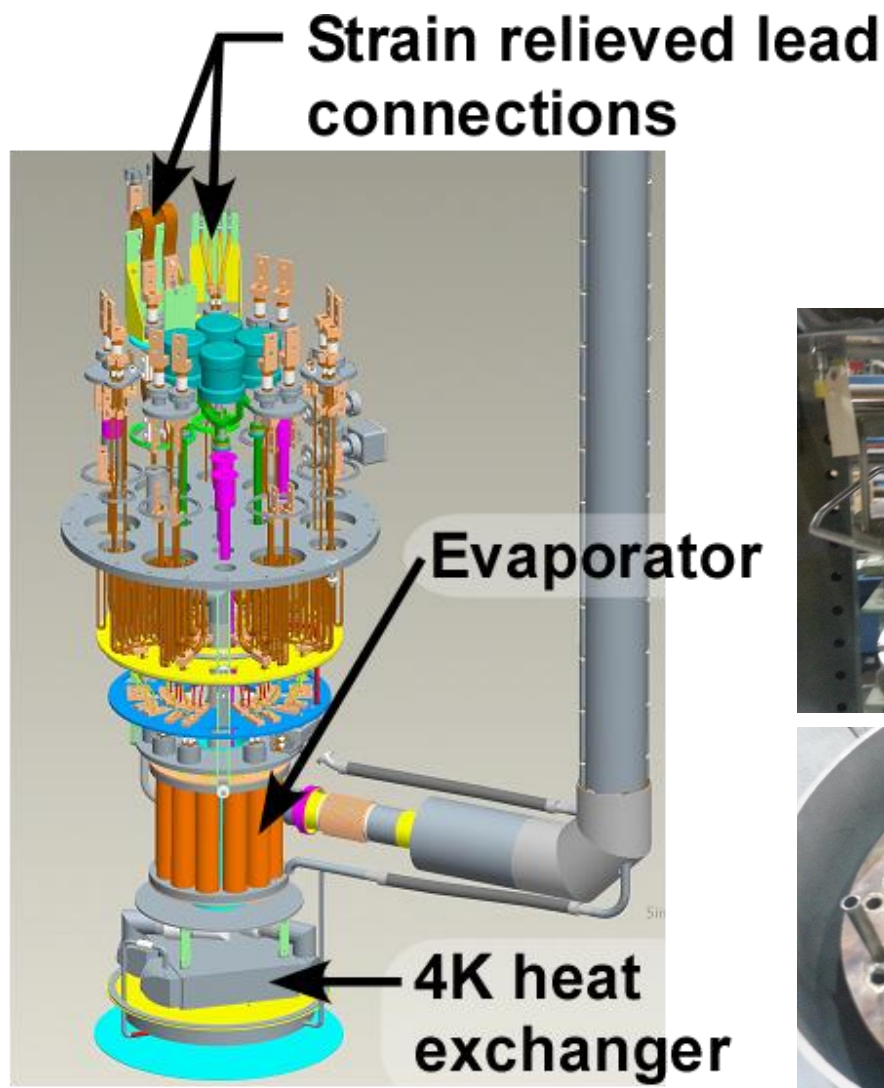
presented by Brett Parker, BNL-SMD



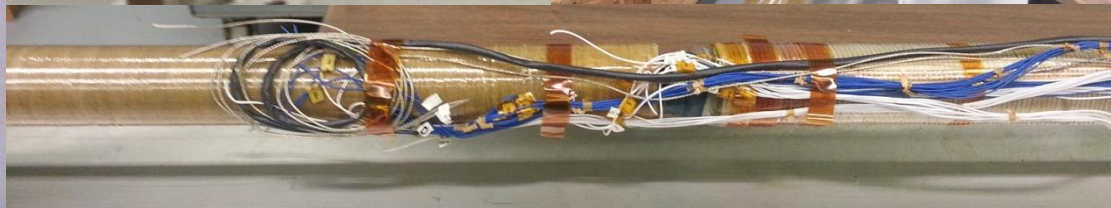
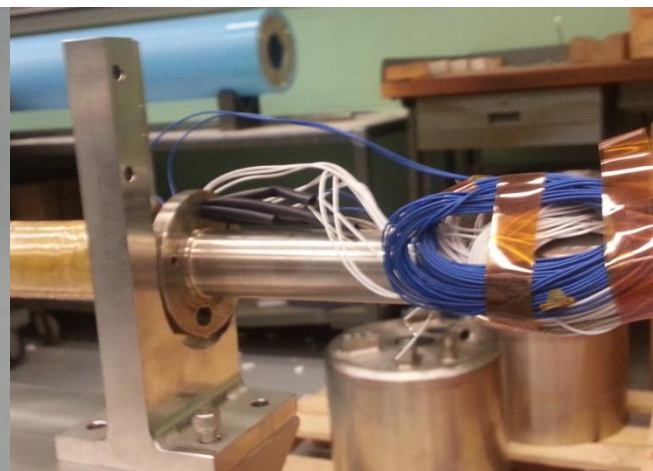
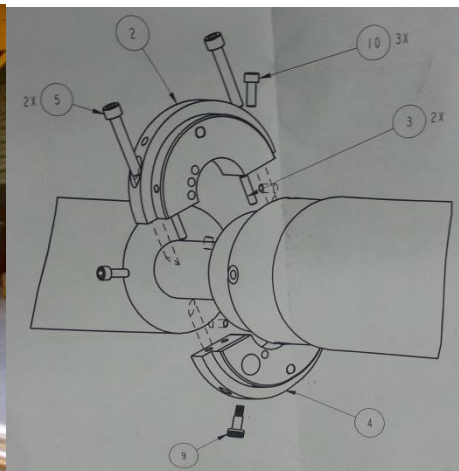
QD0 R&D Update

- All major parts and subassemblies needed for the QD0 R&D prototype and its Service Cryostat are now in hand.
- Assembly of the magnet & service cryostat will be completed before end of FY'13 (Sept').
- We do not anticipate having sufficient funds remaining for full cold and vibration testing but we hope at least to test the Service Cryostat low temperature operation.

Service Cryostat Assembly



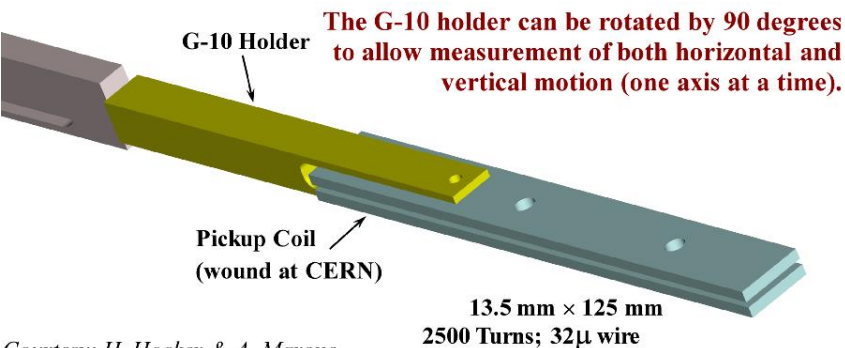
QD0 Coil & Alignment Sled Assembly



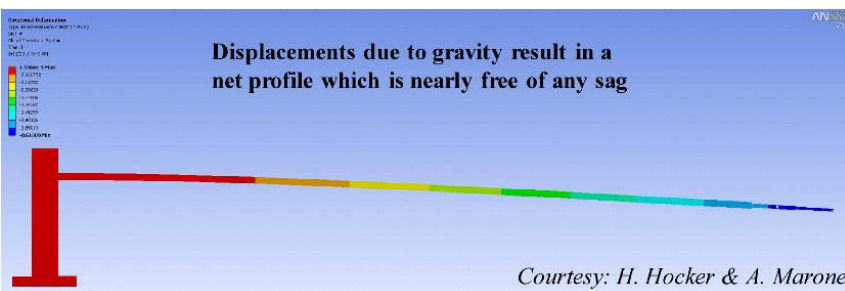
Magnetic Stability Measurements



2500-turn coil from CERN



Courtesy: H. Hocker & A. Marone

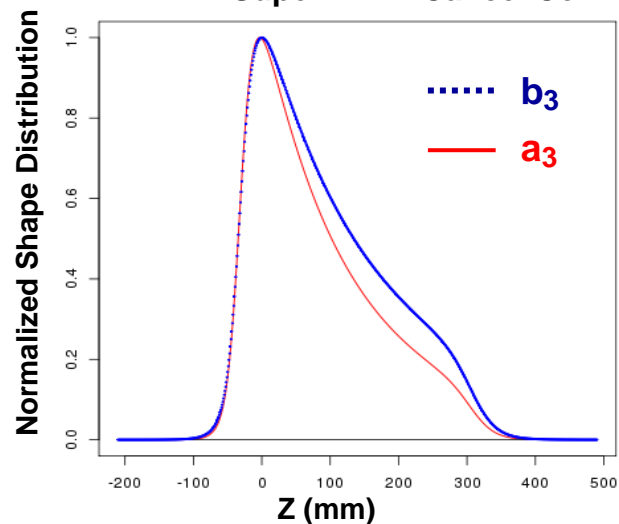


Courtesy: H. Hocker & A. Marone

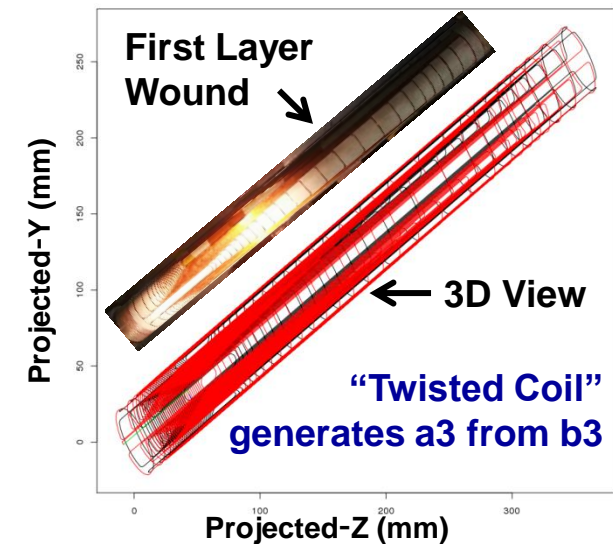
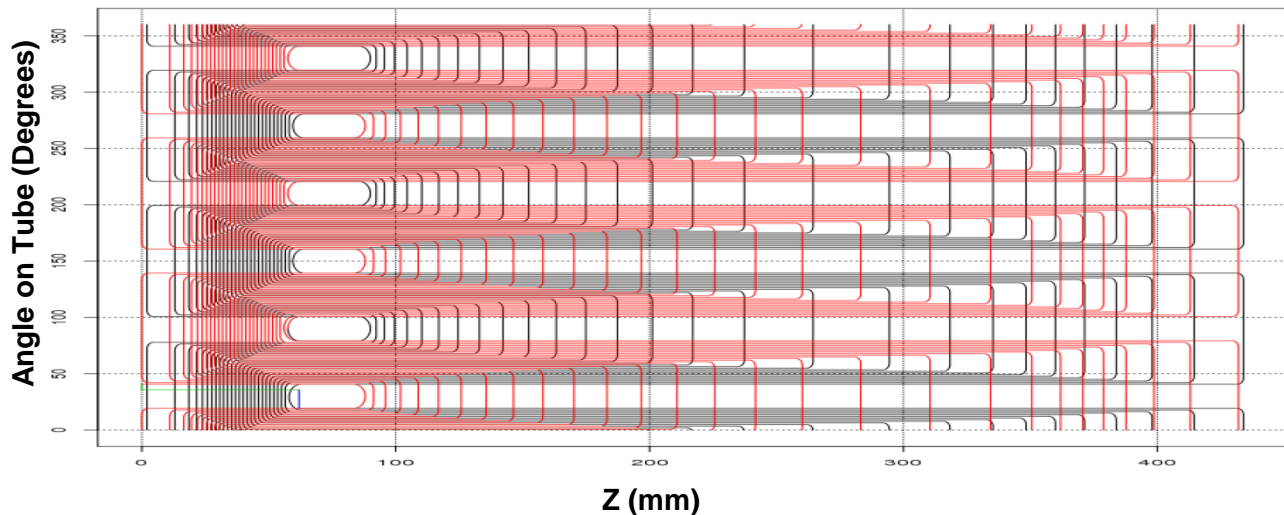
- R&D proceeds developing system with a 2500 turn pickup coil that is cantilevered into the magnet bore from a vibration isolation table.
- Our ultimate goal is to directly measure small magnetic field shifts due to magnet vibration.
- This technology will also be applied to the measurement of the SuperKEKG IR magnets.
- The above will be discussed at magnetic measurements workshop next week at BNL, [IMMW 18](#).

Consider Some New MDI Possibilities

SuperKEKB Cancel Coil



SuperKEKB Cancel Coil: Two Layer Sextupole Winding Pattern



- Now have experience winding quite sophisticated superconducting coils (see SuperKEKB example).
- There are also new ideas for QD0 anti-solenoid.
- Can try to decrease cryostat transverse size while improving optics flexibility at low energy.
- There are also some new concepts to explore to improve anti-DID manufacture and integration.