

Fermilab

5/29/91
TS-SSC 91-099

To: Peter Wanderer
From: Jim Strait and Moyses Kuchnir
Subj: Twist measurements of DC0304, 306 and 202

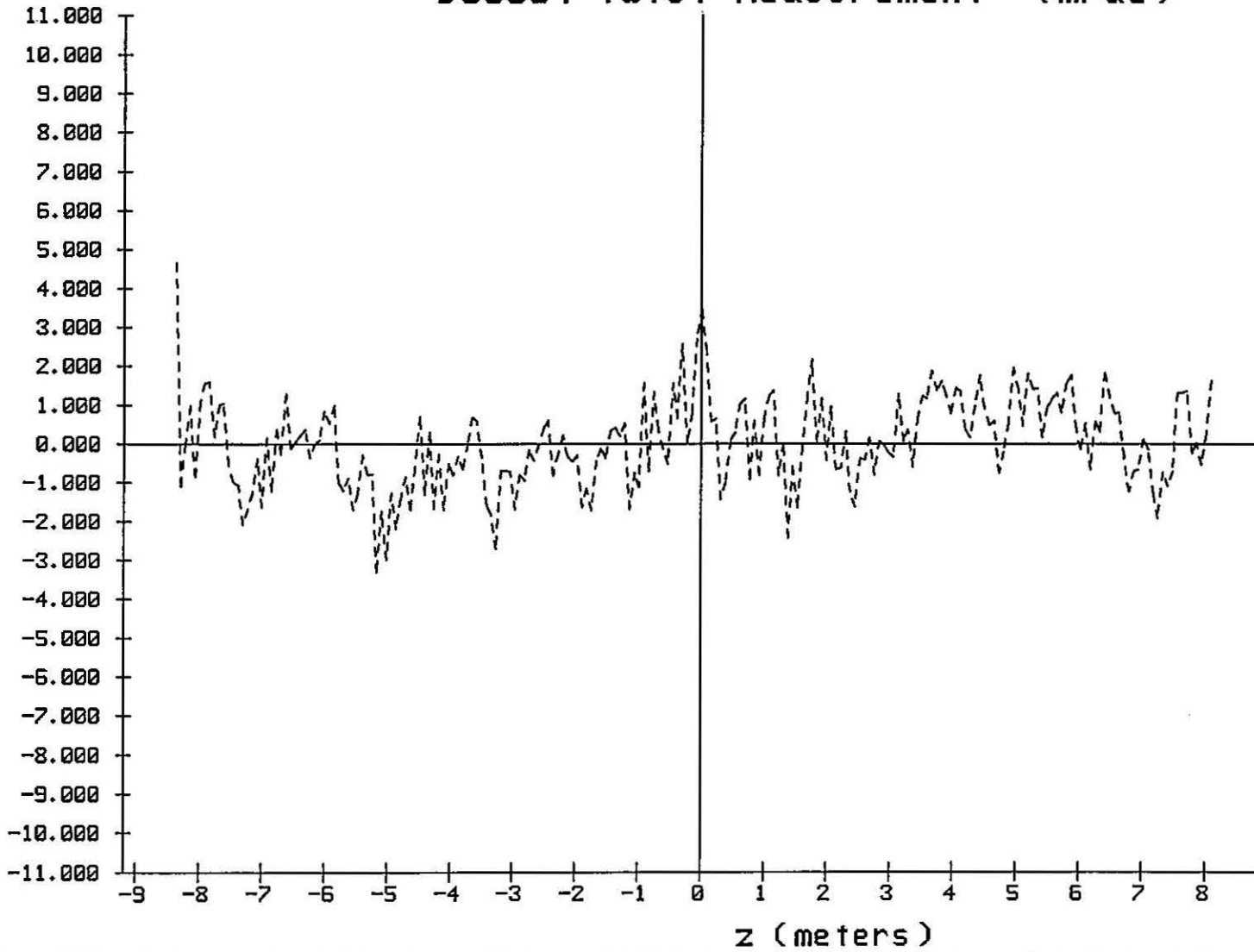
Attached are plots of the vertical field angle measurements for DC0304, DC0306 and DC0202 made on 12/10/90, 3/11/91 and 4/10/91. All three measurements were made with the magnet in the cryostat, some at MTF and others at ICB. Because the average field angle depends on how the magnet is mounted, it is not a characteristic of the magnet alone. In the attached plots the field angle has been shifted so that the average is zero. Attached also are plots of the integral of the field angle with respect to z . The two Fermilab magnets, which were yoked using the full length alignment key to hold the assembly in a nominally twist free state, easily satisfy the requirement that the integrated twist be everywhere less than 10 mrad-m. For comparison DC0202, which was welded without the alignment tooling, doesn't quite meet the specification. The maximum twist angle and the maximum integrated twist for these three magnets are given below.

Magnet	max integral(phi-dx)	max phi
DC0304	-3.7 mrad-m	4.7 mrad
DC0306	-5.1 mrad-m	6.6 mrad
DC0202	-11.3 mrad-m	9.4 mrad

cc: R.Bossert, J.Carson, S.Delchamps, A.Devred, S.Gourlay, W.Koska, M.Lamm,
M.Wake

Note: Files in MDTF00::usr\$root:[FAP]
W.K.

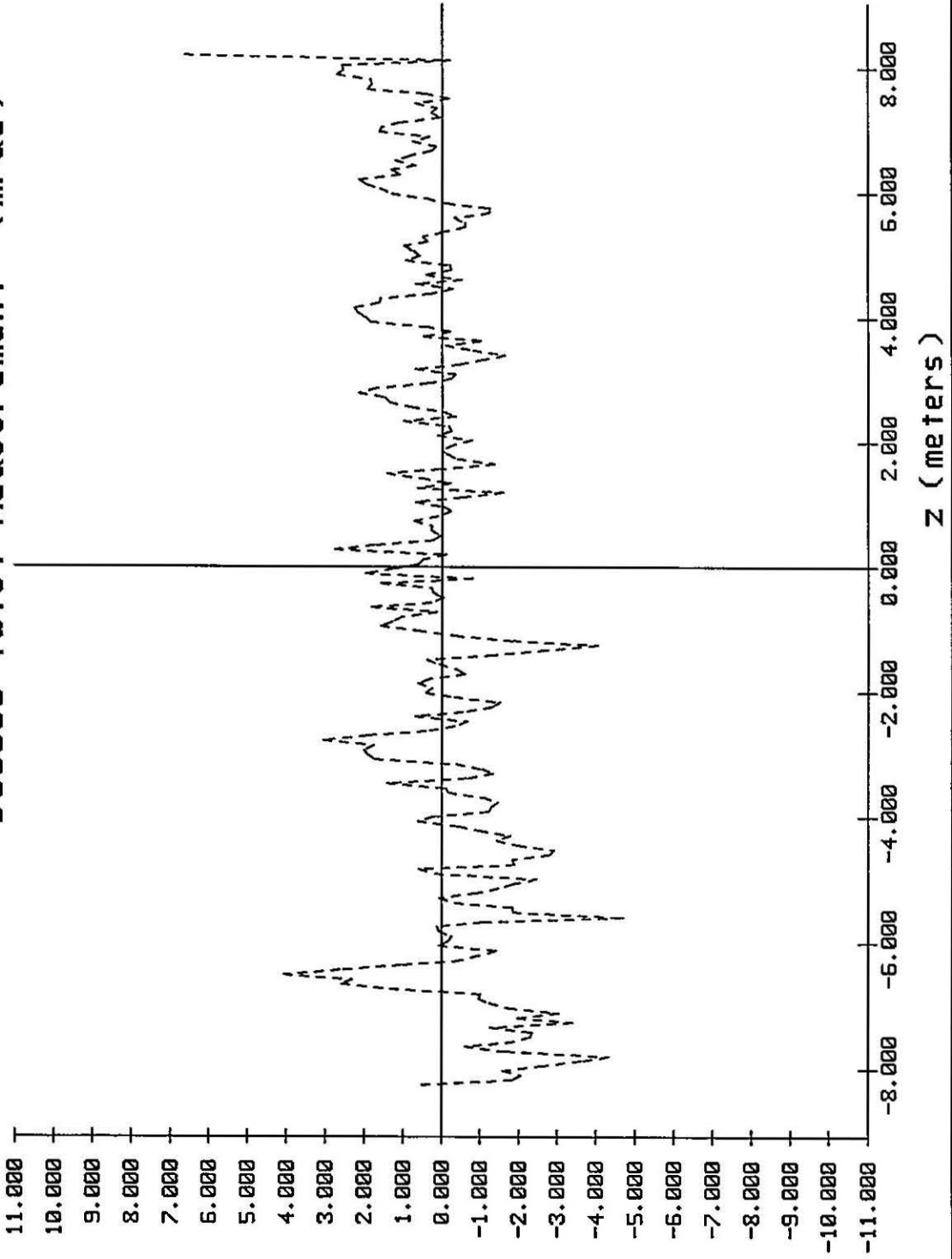
DC0304 Twist Measurement (mrad)



* LEGEND *

----- Twist (mrad)

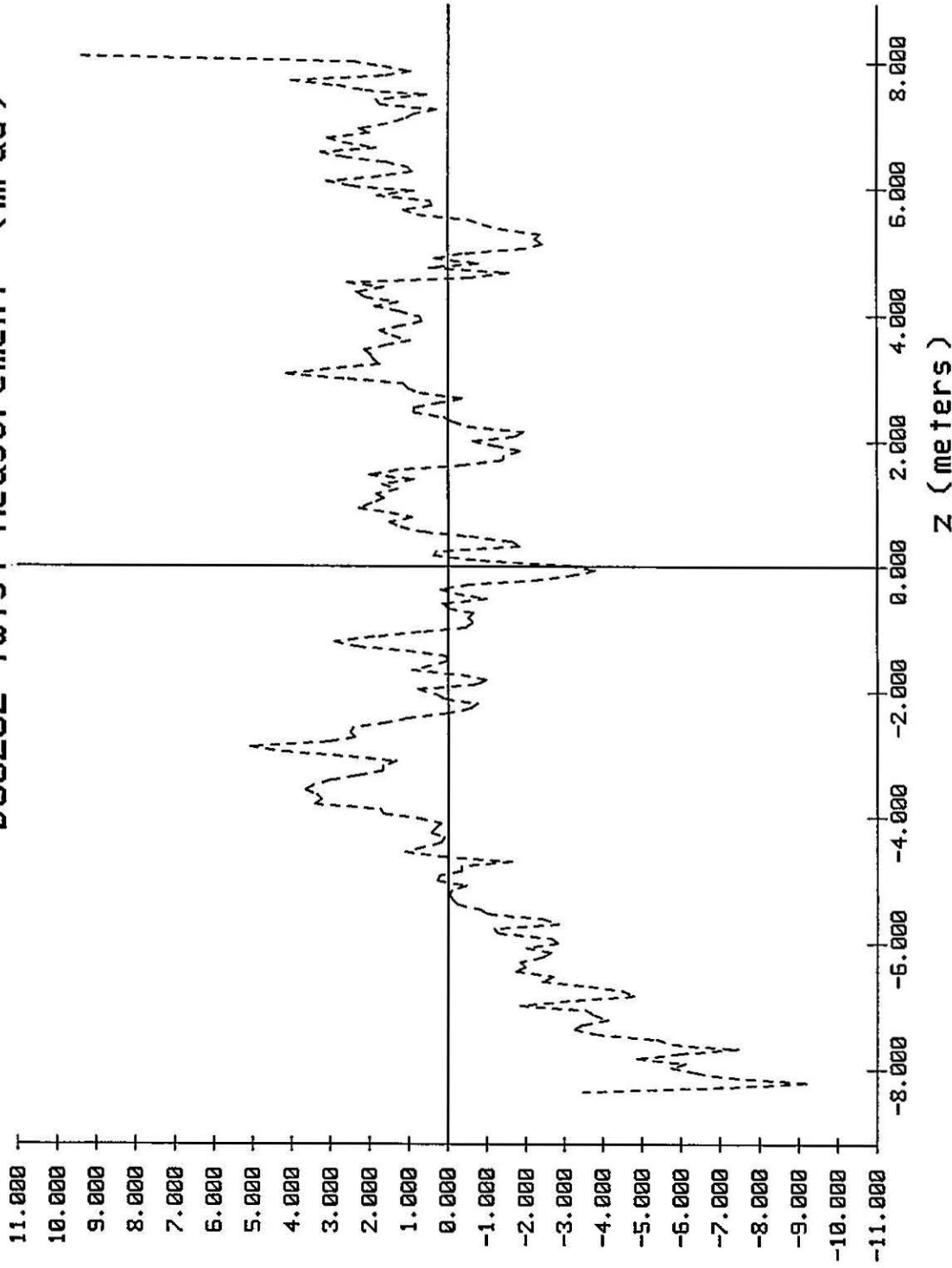
DC0306 Twist Measurement (mrad)



* LEGEND *

-----Twist (mrad)

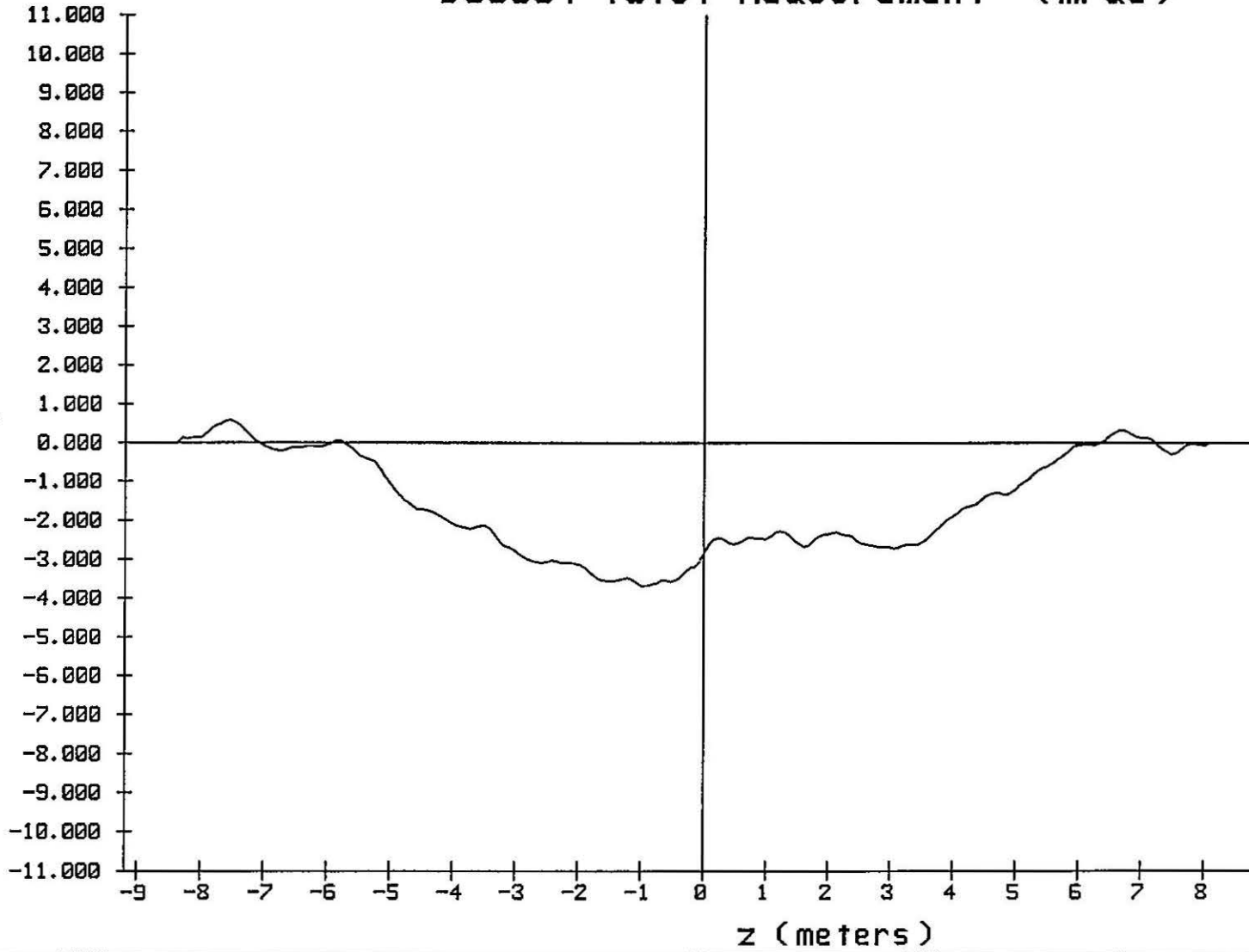
DC0202 Twist Measurement (mrad)



* LEGEND *

-----Twist (mrad)

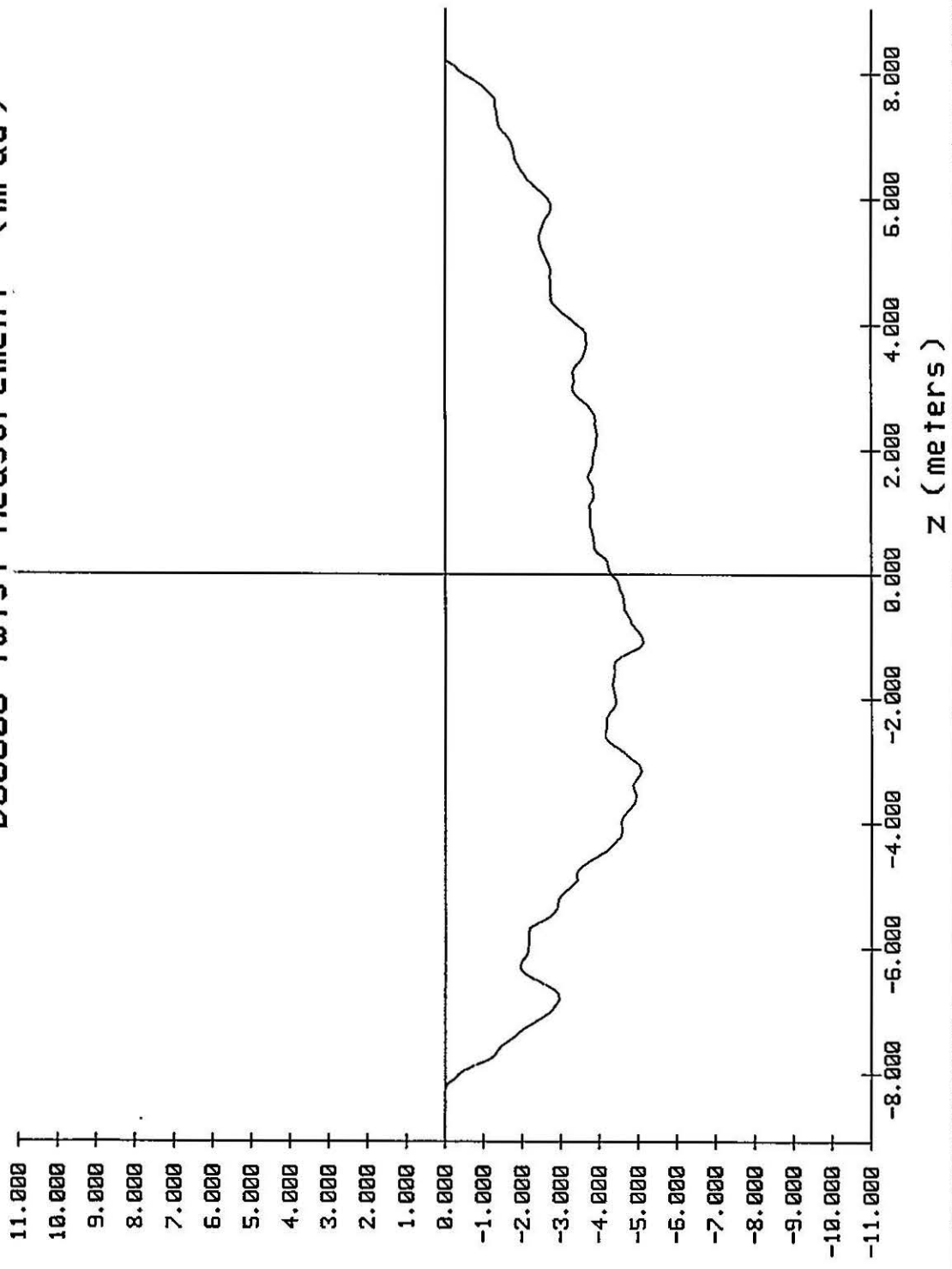
DC0304 Twist Measurement (mrad)



* LEGEND *

----- mrad-meters

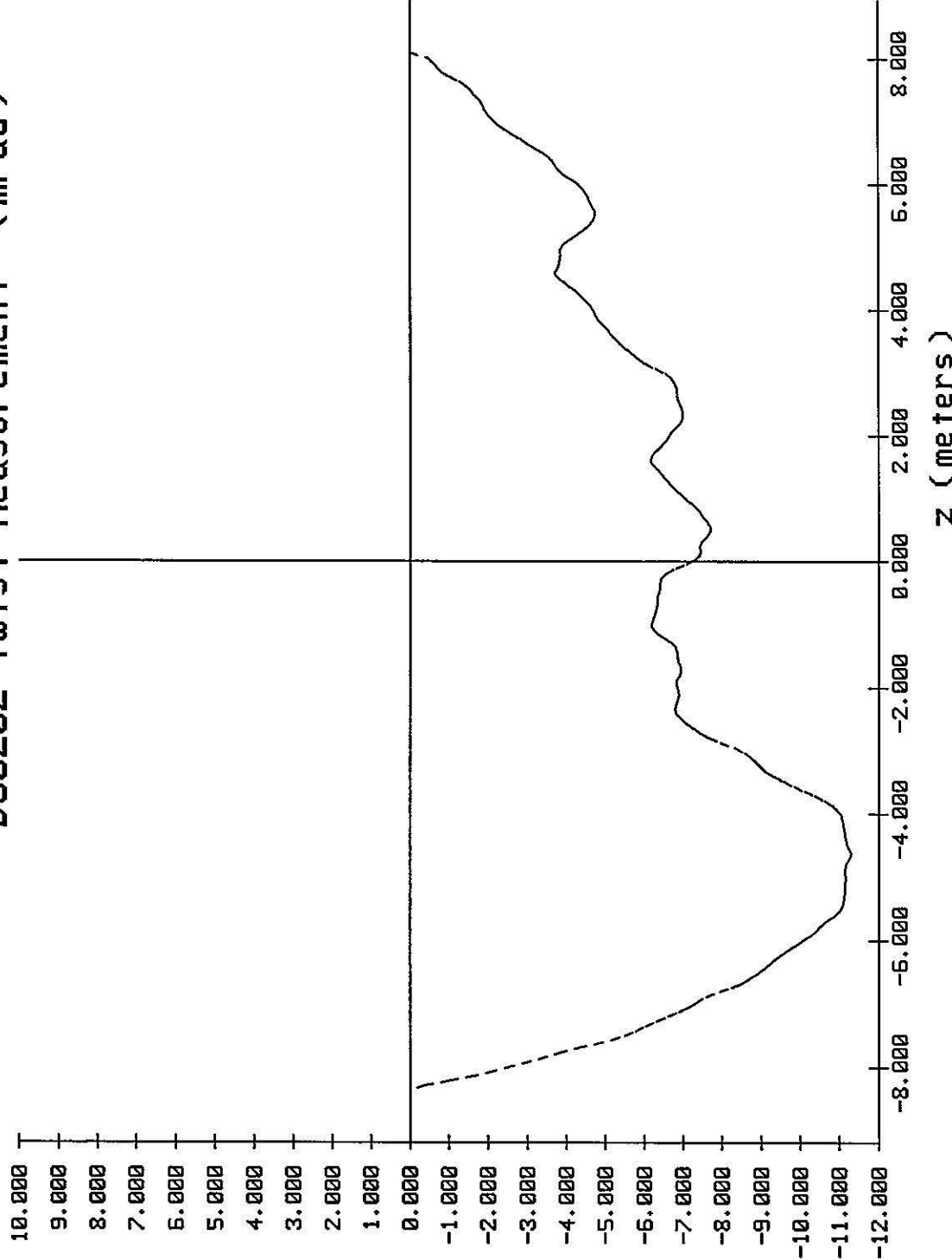
DC0306 Twist Measurement (mrad)



* LEGEND *

-----mrad-meters

DC0202 Twist Measurement (mrad)



* LEGEND *

-----mrad-meters