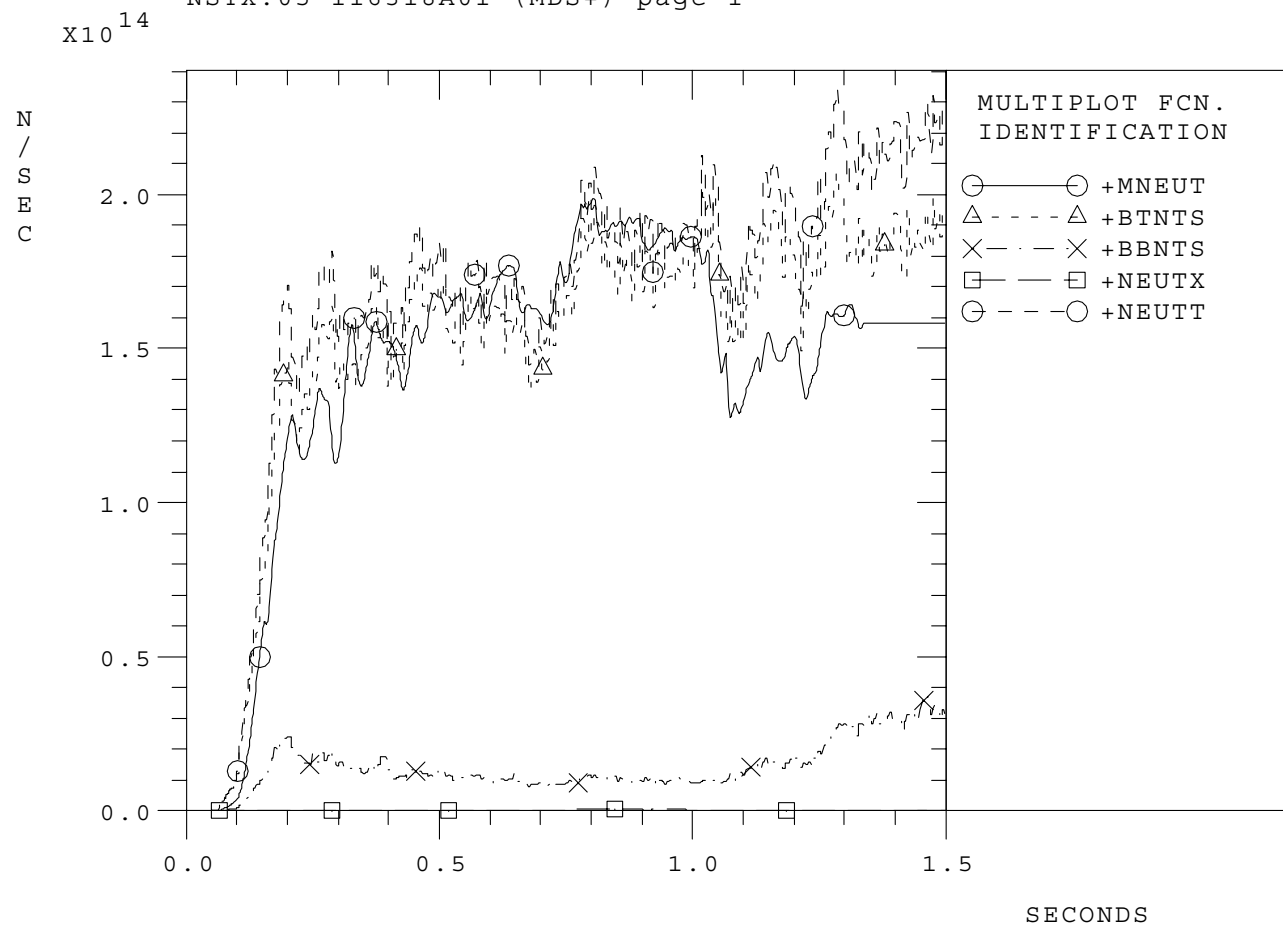


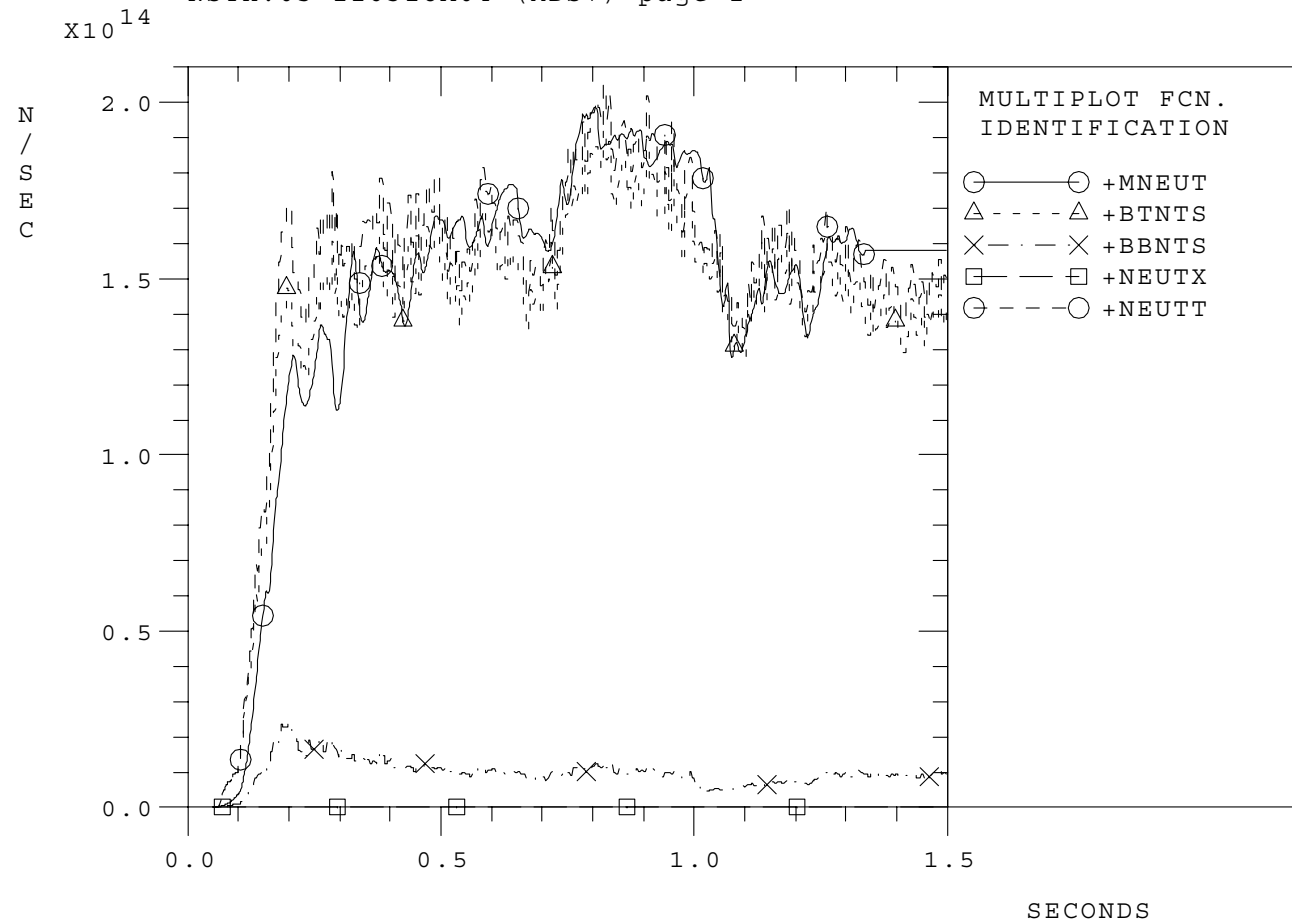
Examine the Effect of Fast Ion Diffusion on the Neutral Beam Current Drive

(S.M. Kaye, 7/25/05)

- * Long pulse LSN discharge: low-f, low-n MHD starting at $t=1$ s (116318)
- * Model fast ion diffusion with $\chi_{\text{fast}} = 5 \text{ m}^2/\text{s}$ from $r/a=0$ to 0.5 (0 outside this radius range) starting at 1 s to match neutrons
- * Calculate NB current drive differences using TRANSP
- * No EFIT03 available yet; modeled current evolution using magnetic diffusion with Sauter resistivity



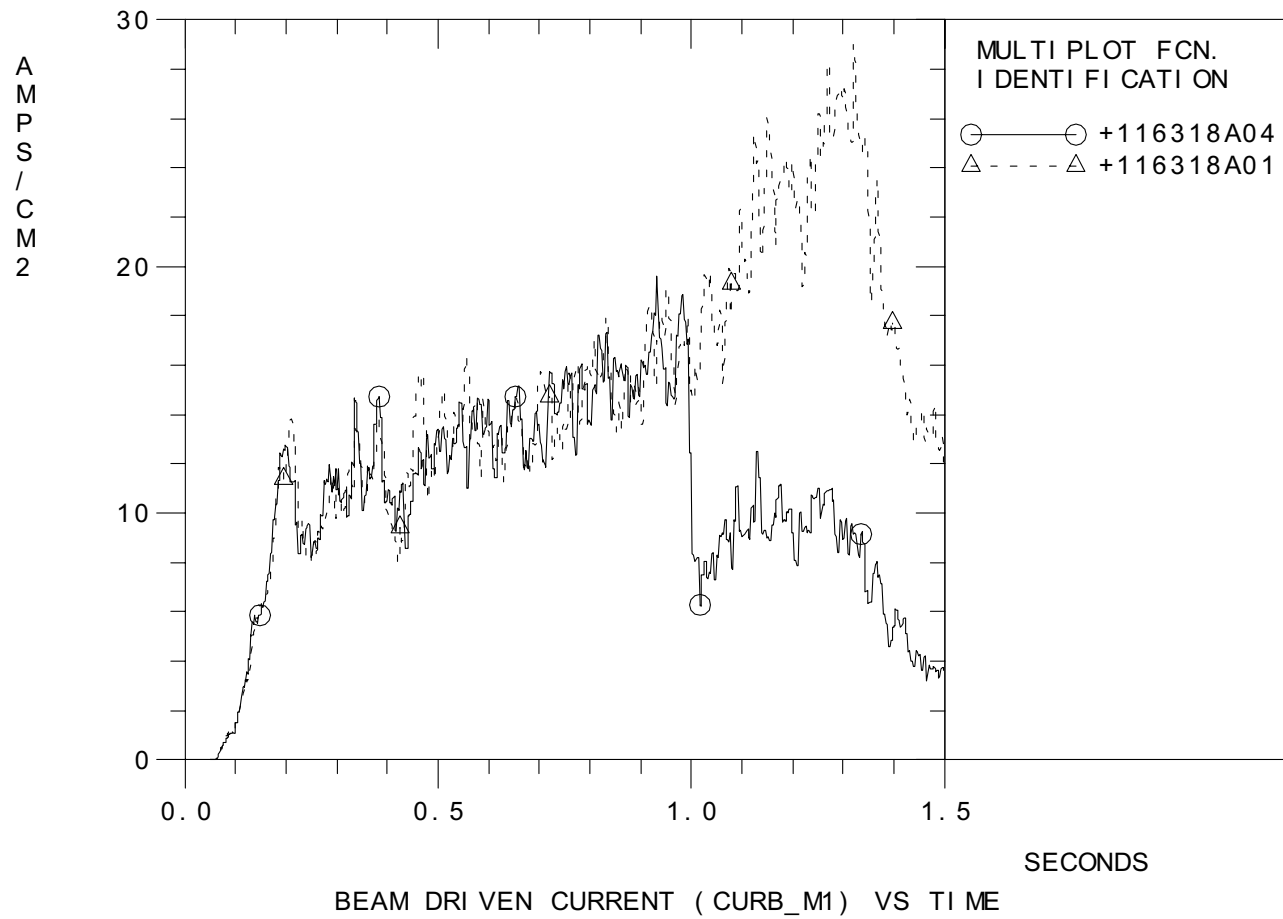
NEUTRON EMISSION (XNEUT) VS TIME



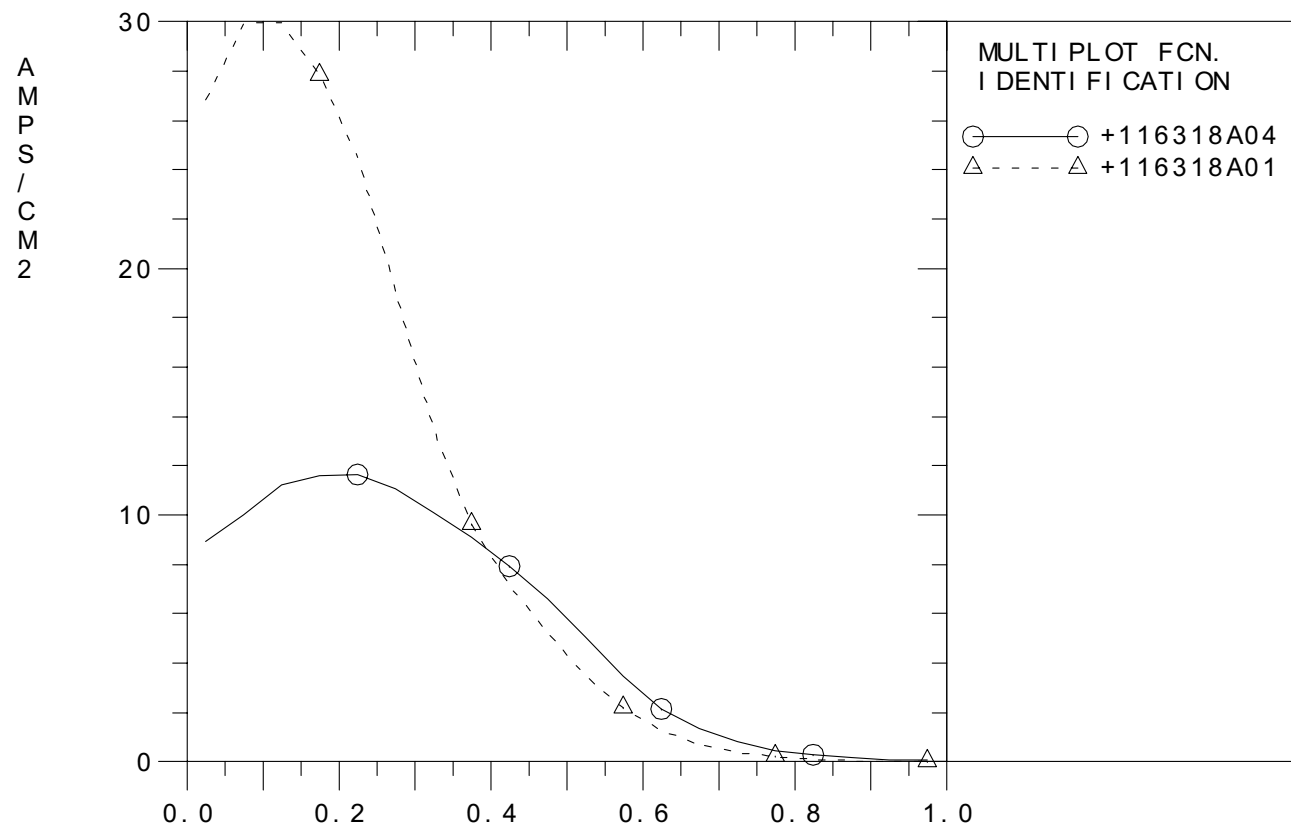
NEUTRON EMISSION (XNEUT) VS TIME

rplot generated by kaye on 21-Jul-2005 15:58:02

NSTX.05 116318A04 (MDS+) page 4
IND(X) = 0.0000E+00



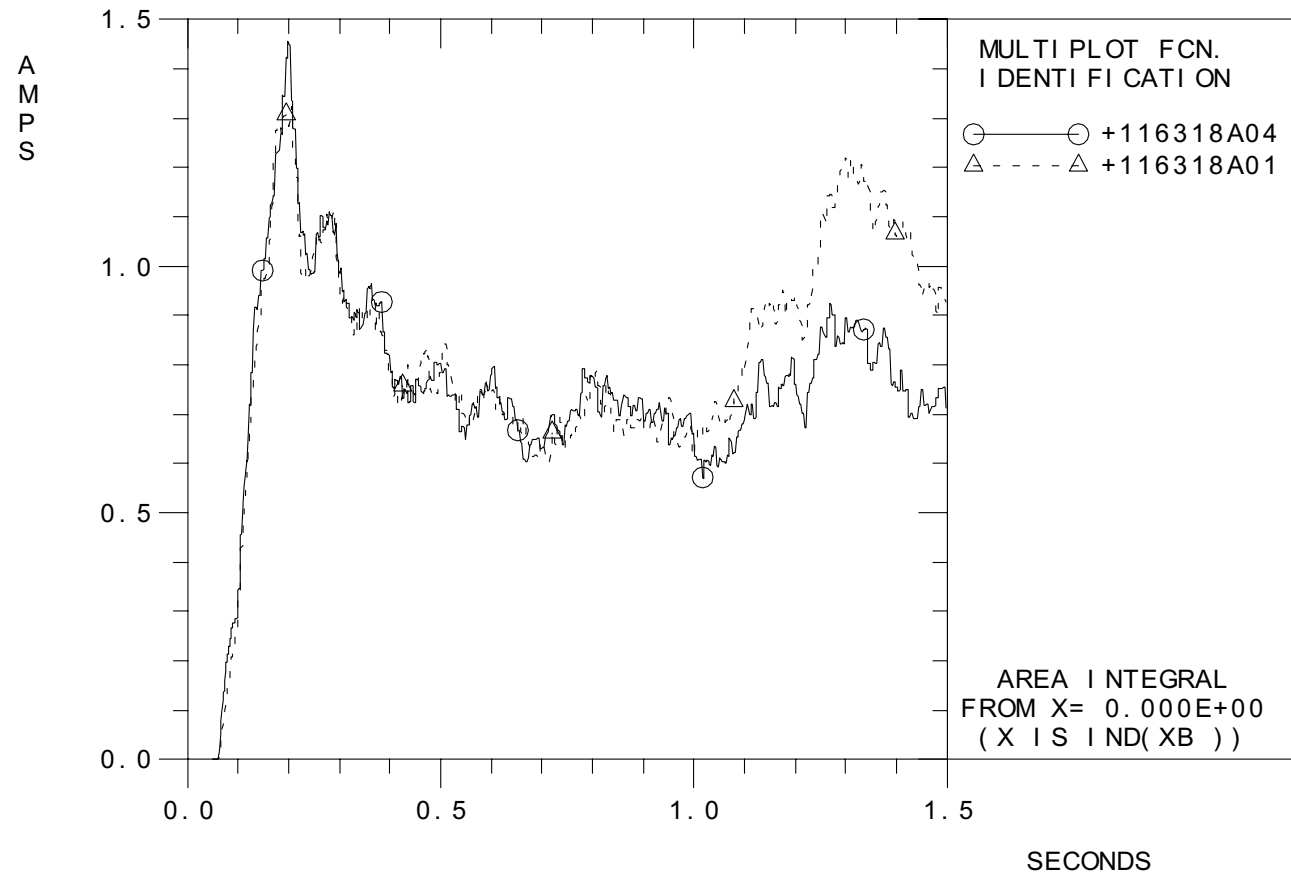
NSTX.05 116318A04 (MDS+) page 1
TIME = 1.3000E+00 SECONDS



BEAM DRIVEN CURRENT (CURB_M1) VS X

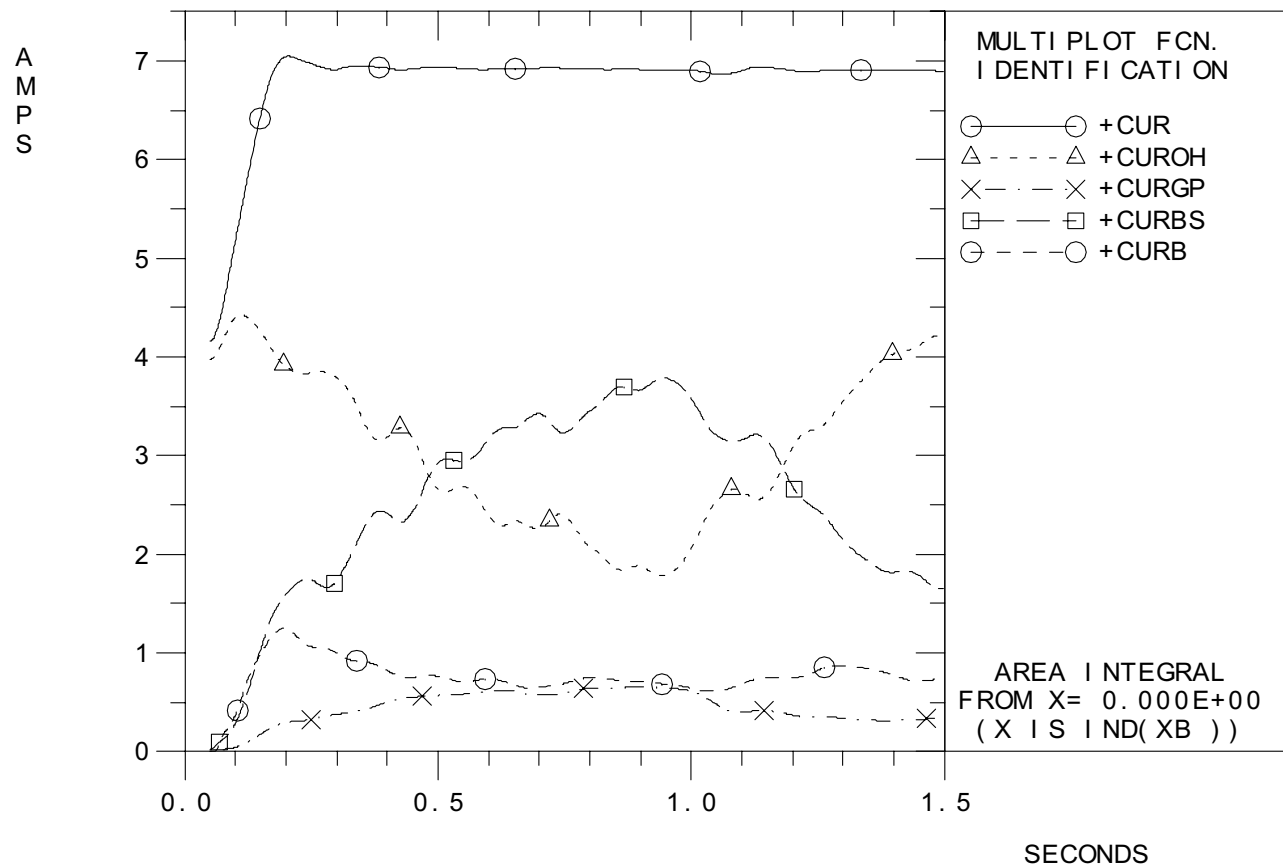
rplot generated by kaye on 21-Jul-2005 16:00:28

NSTX.05 116318A04 (MDS+) page 2
IND(XB) = 1.0000E+00



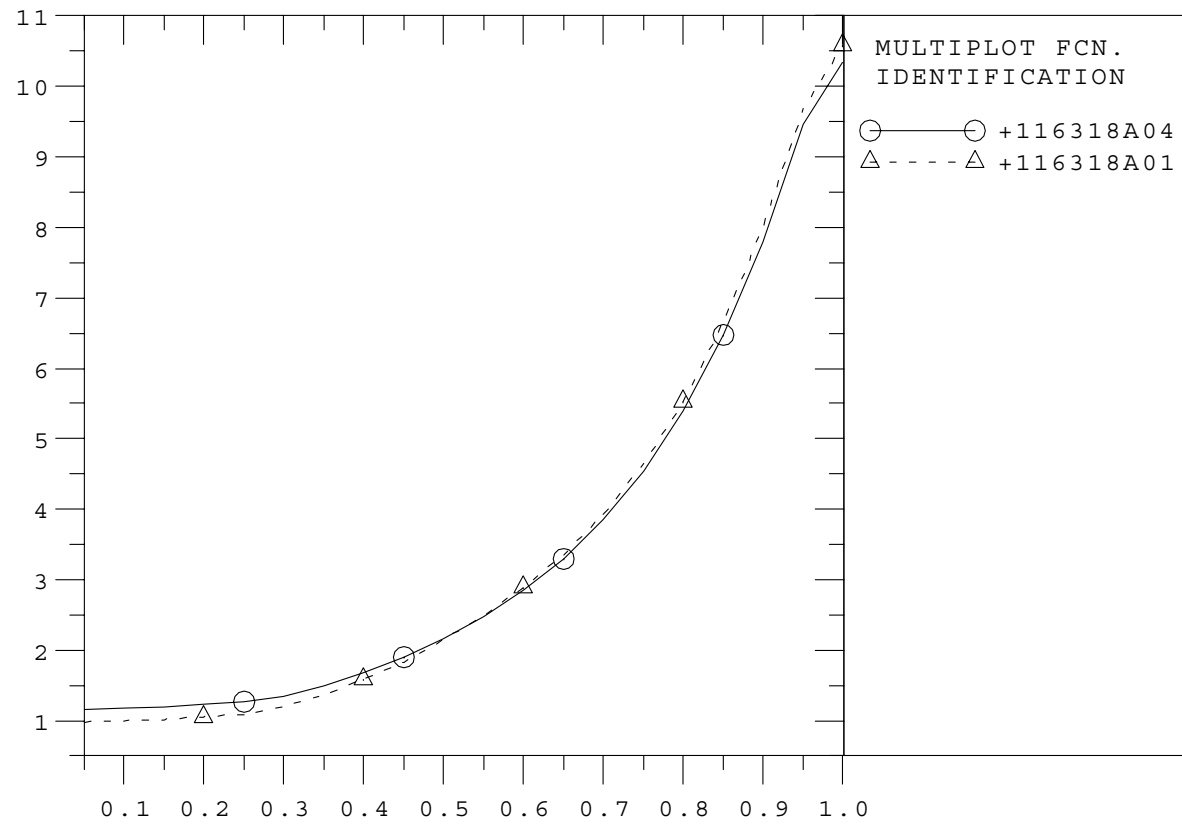
BEAM DRIVEN CURRENT (CURB_M1) VS TIME

NSTX.05 116318A0 SMOOTHED page 6
 $\text{IND}(\text{XB}) = 1.0000\text{E}+00$
 $\times 10^5$



PLASMA CURRENTS (PCURS) VS TIME

NSTX.05 116318A04 (MDS+) page 1
TIME = 1.3000E+00 SECONDS



Q PROFILE (Q_M1) VS XB

rplot generated by kaye on 25-Jul-2005 08:59:37