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K- -Neutron Elastic Scattering from K-d ®-K-d and K-d® K-pn at 1 BeV/C

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UCRL-19359
Addendum

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K^--NEUTRON ELASTIC SCATTERING FROM $K^-d \to K^-d$ AND $K^-d \to K^-pn$ AT 1 BeV/c

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UCRL-19359

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In this addendum to UCRL-19359, we have extended the analysis described there in the following ways:

1. Experimental charge-exchange data from the literature were used in the fitting.[35]

2. Instead of fixing the K^-p elastic-scattering amplitude, based on one of the two models previously described, we have used the experimental K^-p elastic angular distributions from Ref. 25. We then used a parameterization for the K^-p elastic amplitude identical to that of the first K^-p model, but we allowed its exponential background amplitudes to vary in order to obtain the best fit.

3. The first K^-n elastic parameterization (exponential background) was used.

Figures 24 through 28 show the results of this analysis.

It should be noted that as in the previous analyses, the fits at 910 MeV/c are generally bad. The fits at the other momenta are generally better, as can be seen from the figures.

Reference

35. R. Armenteros, M. Ferro-Luzzi, D. W. G. S. Leith, R. Levi-Setti, A. Minten, R. D. Tripp, H. Filthuth, V. Hepp, E. Kluge, H. Schneider, R. Barloutaud, P. Granet, J. Meyer and J. P. Porte, Nuclear Phys. 8, 233 (1968).

Figure Captions

24. $K^-d \rightarrow K^-d$ angular distributions. The smooth curves are from this analysis. This figure should be compared with Fig. 16 of this report.

25. $K^-d \rightarrow K^-pn$ angular distributions. The smooth curves are from this analysis. This figure should be compared with Fig. 17.

26. $K^-n \rightarrow K^-n$ angular distributions as calculated from this analysis. This figure should be compared with Fig. 22.

27. $K^-p \rightarrow K^0n$ angular distributions. The data points are from Ref. 35. The smooth curves are calculated from this analysis.

28. $K^-p \rightarrow K^-p$ angular distributions. The data points are from Ref. 25. The smooth curves with little squares are calculated from this analysis. The smooth curves with no marks are calculated from the first K^-p model described in this report.

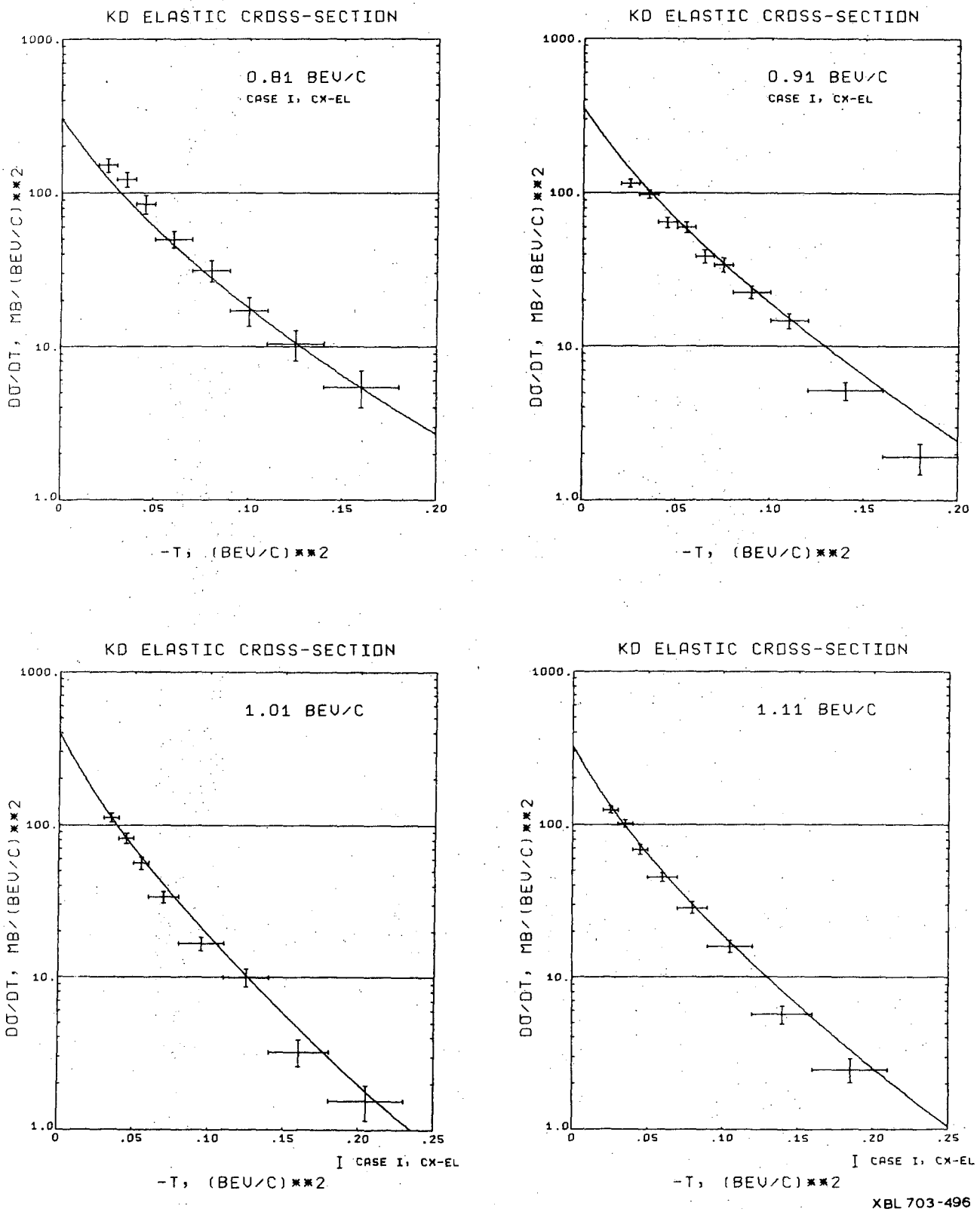
KD ELASTIC CROSS-SECTION
0.81 BEV/C
CASE I, CX-EL
Dσ/DT, MB/(BEV/C)**2
-T, (BEV/C)**2
KD ELASTIC CROSS-SECTION
0.91 BEV/C
CASE I, CX-EL
Dσ/DT, MB/(BEV/C)**2
-T, (BEV/C)**2
KD ELASTIC CROSS-SECTION
1.01 BEV/C
Dσ/DT, MB/(BEV/C)**2
I CASE I, CX-EL
-T, (BEV/C)**2
KD ELASTIC CROSS-SECTION
1.11 BEV/C
Dσ/DT, MB/(BEV/C)**2
I CASE I, CX-EL
-T, (BEV/C)**2
XBL 703-496

Fig. 24

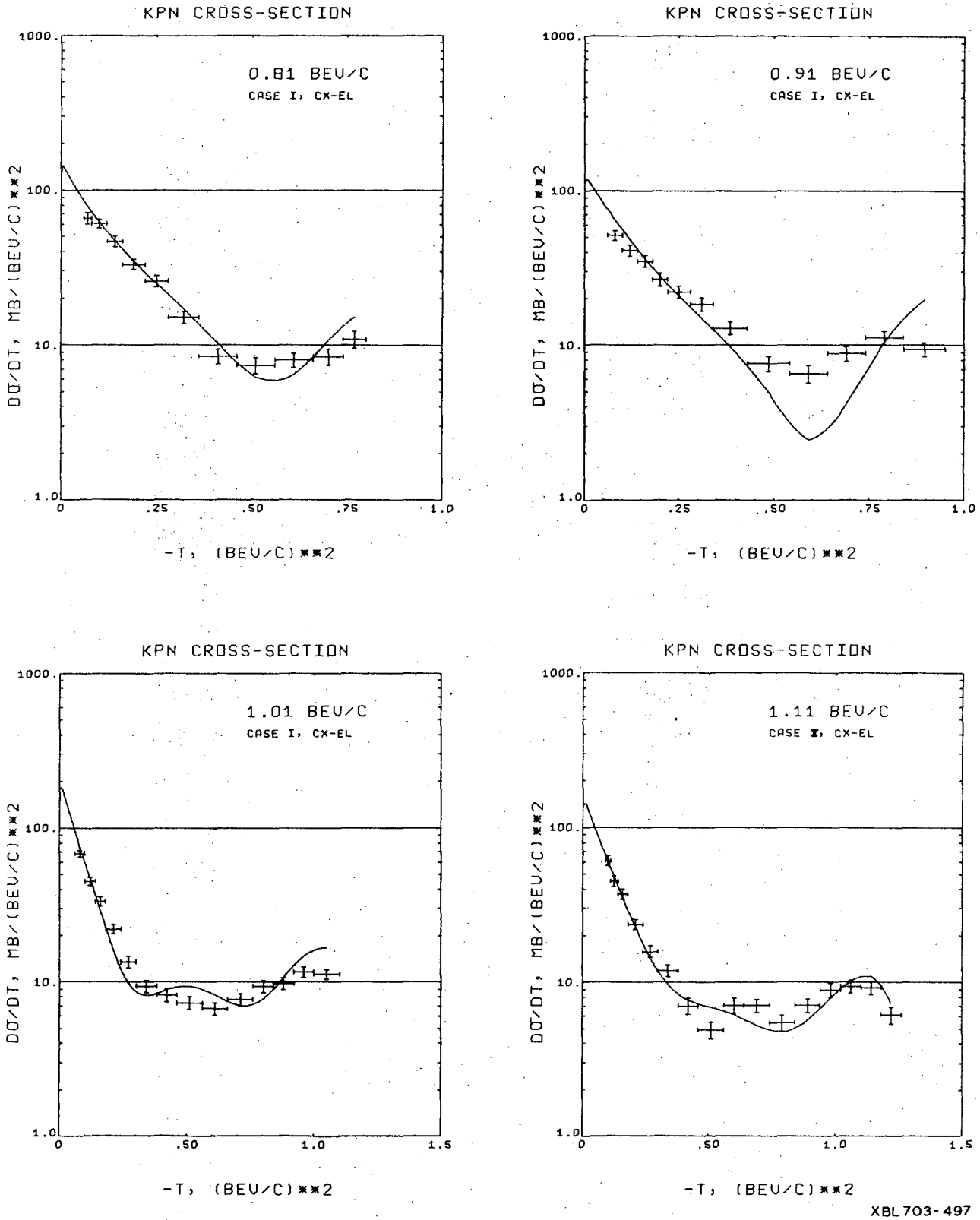
KPN CROSS-SECTION
0.81 BEV/C
CASE I, CX-EL
KPN CROSS-SECTION
0.91 BEV/C
CASE I, CX-EL
KPN CROSS-SECTION
1.01 BEV/C
CASE I, CX-EL
KPN CROSS-SECTION
1.11 BEV/C
CASE I, CX-EL
DσDT, MB/(BEV/C)**2
-T, (BEV/C)**2
1000.
100.
10.
1.0
0
.25
.50
.75
1.0
1.5
XBL703-497

Fig. 25

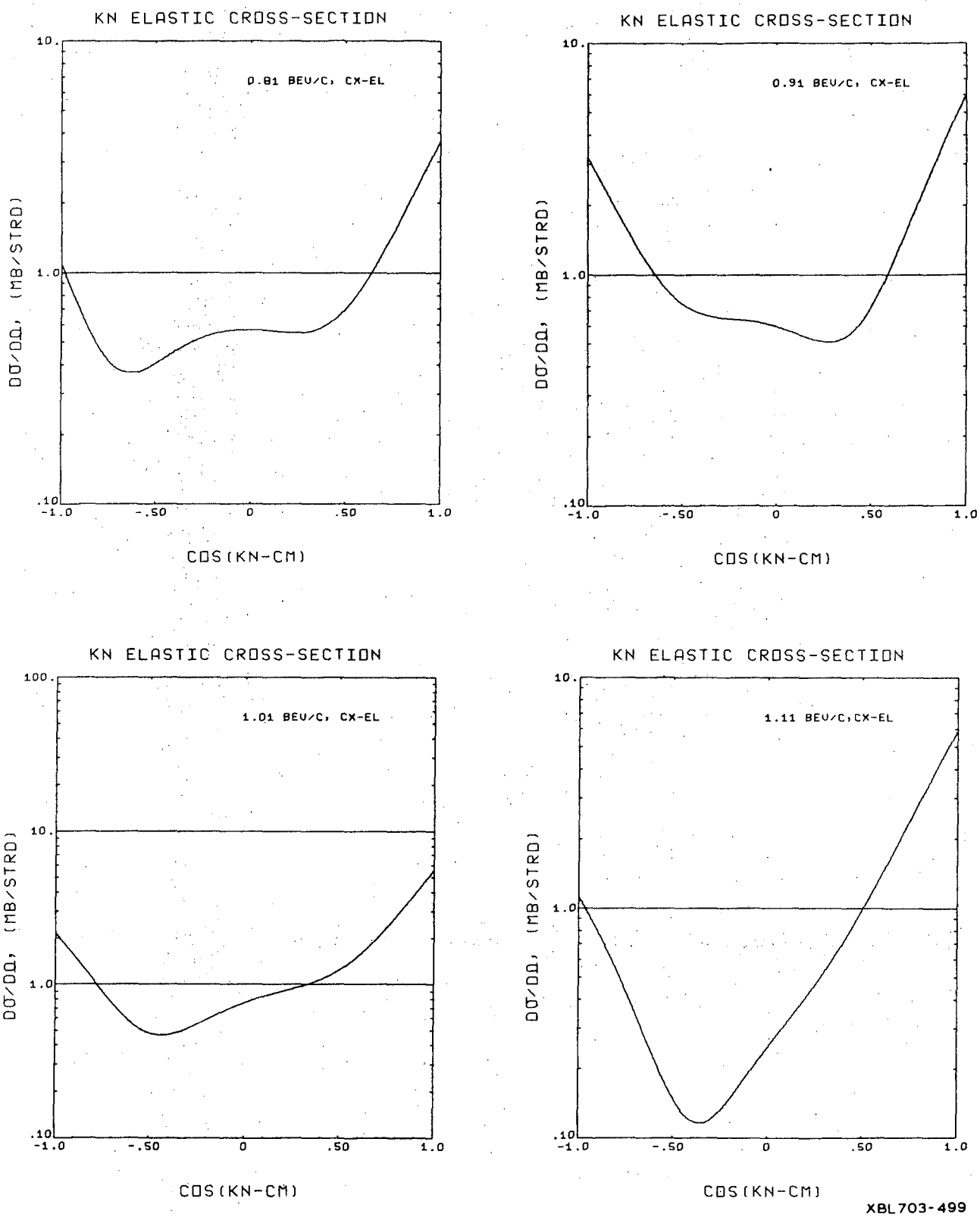
KN ELASTIC CROSS-SECTION
0.81 BEV/C, CX-EL
Dσ/DΩ, (MB/STRD)
COS(KN-CM)
KN ELASTIC CROSS-SECTION
0.91 BEV/C, CX-EL
Dσ/DΩ, (MB/STRD)
COS(KN-CM)
KN ELASTIC CROSS-SECTION
1.01 BEV/C, CX-EL
Dσ/DΩ, (MB/STRD)
COS(KN-CM)
KN ELASTIC CROSS-SECTION
1.11 BEV/C,CX-EL
Dσ/DΩ, (MB/STRD)
COS(KN-CM)
XBL703-499

Fig. 26

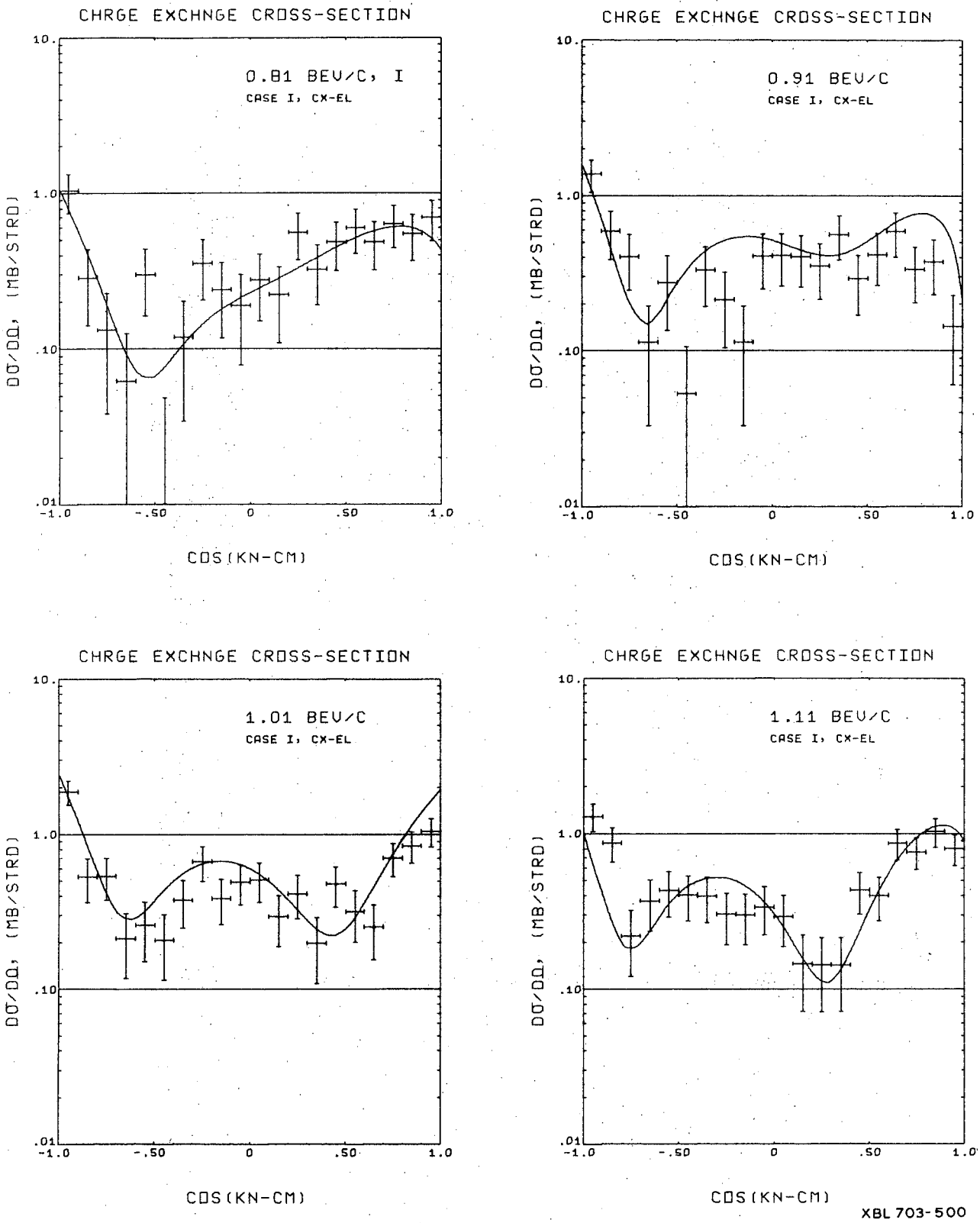
CHRGE EXCHNGE CROSS-SECTION
0.81 BEV/C, I
CASE I, CX-EL
Dσ/DΩ, (MB/STRD)
COS(KN-CM)
CHRGE EXCHNGE CROSS-SECTION
0.91 BEV/C
CASE I, CX-EL
Dσ/DΩ, (MB/STRD)
COS(KN-CM)
CHRGE EXCHNGE CROSS-SECTION
1.01 BEV/C
CASE I, CX-EL
Dσ/DΩ, (MB/STRD)
COS(KN-CM)
CHRGE EXCHNGE CROSS-SECTION
1.11 BEV/C
CASE I, CX-EL
Dσ/DΩ, (MB/STRD)
COS(KN-CM)
XBL 703-500

Fig. 27

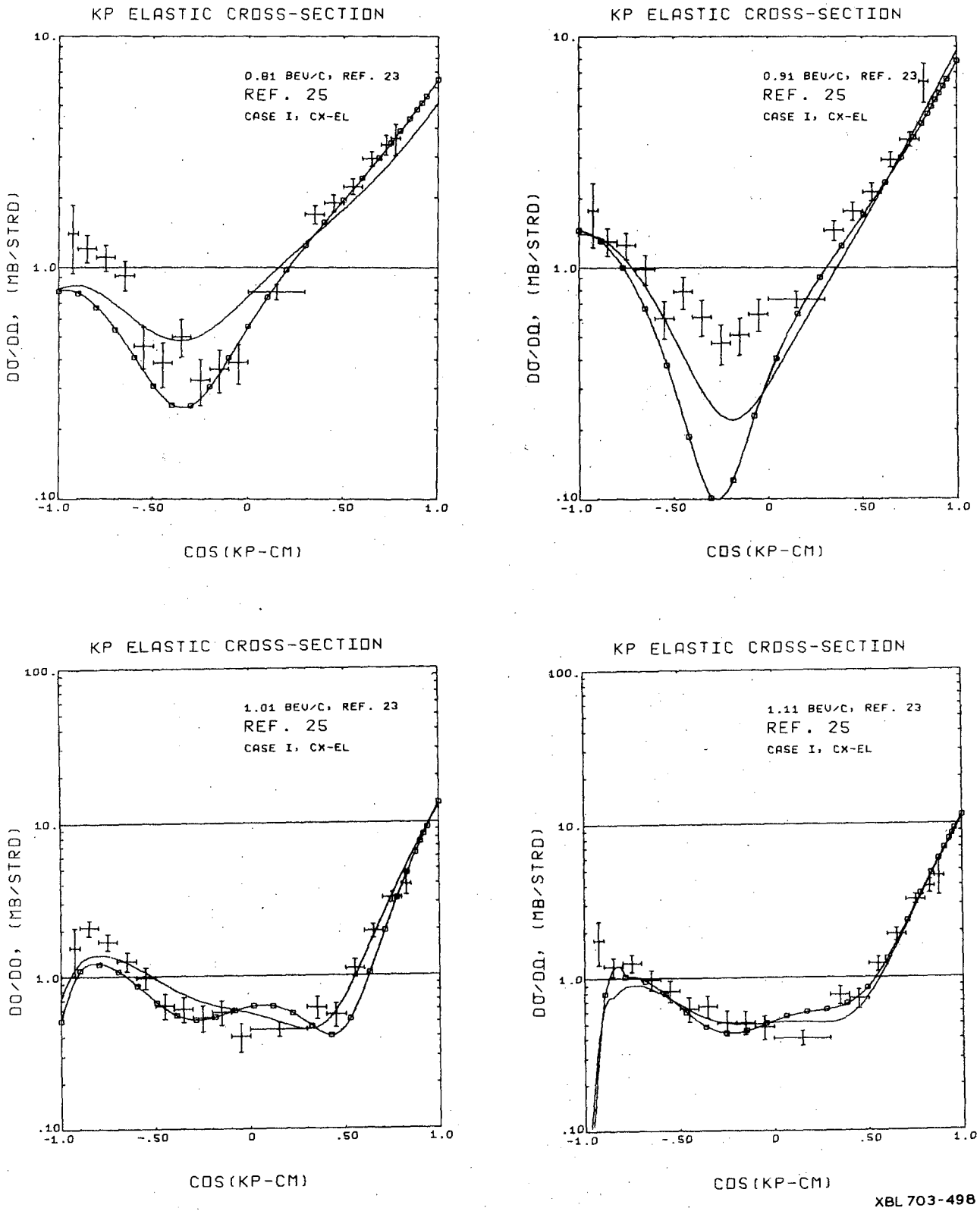
KP ELASTIC CROSS-SECTION
0.81 BEV/C, REF. 23
REF. 25
CASE I, CX-EL
Dσ/DΩ, (MB/STRD)
COS(KP-CM)
KP ELASTIC CROSS-SECTION
0.91 BEV/C, REF. 23
REF. 25
CASE I, CX-EL
Dσ/DΩ, (MB/STRD)
COS(KP-CM)
KP ELASTIC CROSS-SECTION
1.01 BEV/C, REF. 23
REF. 25
CASE I, CX-EL
Dσ/DΩ, (MB/STRD)
COS(KP-CM)
KP ELASTIC CROSS-SECTION
1.11 BEV/C, REF. 23
REF. 25
CASE I, CX-EL
Dσ/DΩ, (MB/STRD)
COS(KP-CM)
XBL 703-498

Fig. 28

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