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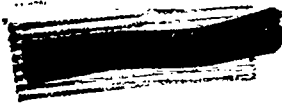
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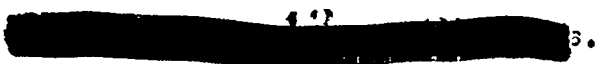


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Series 1



December 2, 1949

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SUMMARY OF FAST FISSION CROSS SECTIONS

By

**PUBLICLY RELEASABLE**

*Memo from Fred Lind to Krohn* ~~FC-14~~ Date: 7-17-80

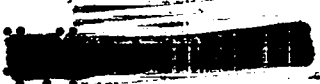
By Markus Lujan, CIC-14 Date: 8-6-96

Warren Nyer

Physics Fission



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 O T I D E C L A S S I F I E D

SUMMARY OF FAST FISSION CROSS SECTIONS OF  
 O2, 23, 25, 28, 49 AS A FUNCTION OF ENERGY

An attempt has been made to collect in a brief report the present information on fast fission cross sections. Explanatory remarks about the curves are listed below under titles corresponding to the curves. Many of the reports referred to are in turn summaries of earlier reports not listed.

$$\frac{\sigma_{28}}{\sigma_{02}}$$

The points labelled LAMS-774 were obtained from the ratios  $\frac{\sigma_{28}}{\sigma_{25}}$ ,  $\frac{\sigma_{02}}{\sigma_{25}}$  given in LA-520.

References: LA-39, LA-520, LAMS-774, LAMS-776, LAMS-938

$$\frac{\sigma_{28}}{\sigma_{25}}$$

The point with the broken arrow extending from it is the LAMS-774 value of  $\frac{\sigma_{28}}{\sigma_{25}}$ .

References: LA-128 Hall, Koontz, Rossi  
 LA-163  $\Xi$  Group  
 LA-520 Williams  
 CF-618 Hanson  
 CF-636 Heydenberg and Meyer  
 CF-638  
 LAMS-774 A. Phillips, Rosen and Taschek  
 LAMS-776 Jarvis  
 LAMS-938 Nyer  
 BM-493 Bretscher

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$\sigma_{02}$  The 14-Mev values are based on  $\sigma_{28}$  from LA-719.

References: LA-39 Taschek  
LA-520 Williams  
LA-719 Nyer  
LAMS-774 Rosen, A. Phillips, Taschek  
LAMS-776 Jarvis  
LAMS-938 Nyer

$\sigma_{23}$  Data for energies up to 6 Mev are from LA-520, which included data from LA-188. The 14 Mev point is based on  $\sigma_{28}$  from LA-719.

References: LA-188 Klema  
LA-520 Williams  
LAME-983 Nyer

$\sigma_{25}$  Data for energies below 14 Mev are from LA-520 which included data from LA-128, LA-150, LA-445, LA-447, BM-493. The 14 Mev points are based on  $\sigma_{28}$  from LA-719.

References: LA-128 Hall, Koontz and Rossi  
LA-150 Williams  
LA-445 Taschek and Turner  
LA-447 Bailey  
LA-520 Williams  
LA-719 Nyer  
CF-636 Heydenberg and Meyer  
BM-493 Bretscher  
LAMS-938 Nyer

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$\sigma_{28}$

The disagreement between LA-719 and LAMS-777 on the value of  $\sigma_{28}$  at 14 Mev has been attributed to the presence of scattering material around the neutron source in W Building. It is believed that the LAMS-777 values from 13.5 to 18.0 Mev are slightly low.

References: LA-163  $\Sigma$  Group  
 LA-520 Williams  
 LA-710 Curtis, Fowler and Rosen  
 LA-719 Nyer  
 LAMS-396 Bretscher  
 LAMS-777 Jarvis  
 BM-493 Bretscher  
 CF-636 Heydenberg and Meyer  
 LA-755 Cox, Fowler, Kutz, Stovall

$\sigma_{49}$

The 14 Mev value is based on  $\sigma_{28}$  from LA-719.

References: LA-150 Williams  
 LA-520 Williams  
 LAMS-396 Bretscher  
 LAMS-938 Nyer  
 CF-626 Heydenberg and Meyer

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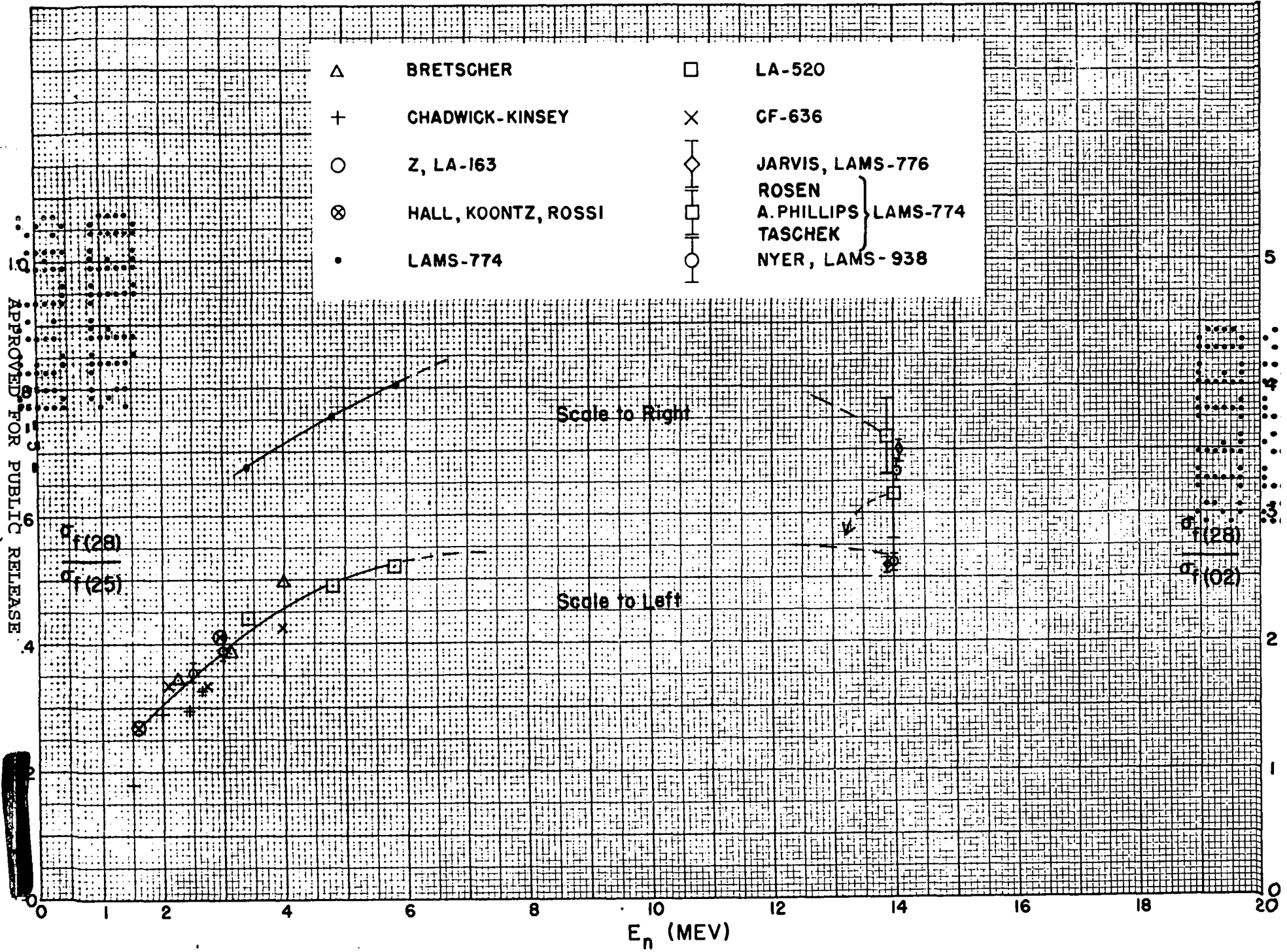
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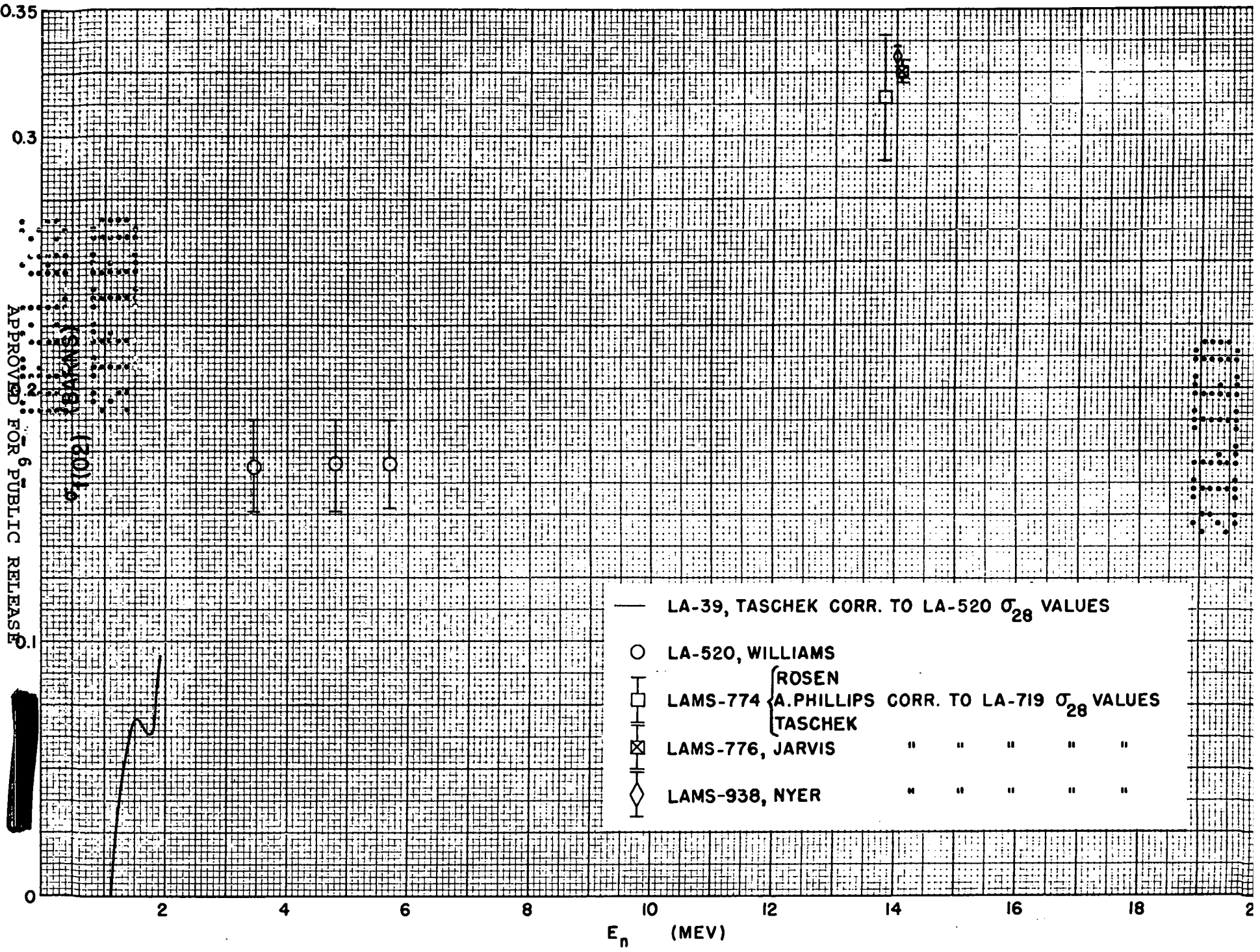
- |   |                     |   |                        |
|---|---------------------|---|------------------------|
| △ | BRETSCHER           | □ | LA-520                 |
| + | CHADWICK-KINSEY     | × | CF-636                 |
| ○ | Z, LA-163           | ◇ | JARVIS, LAMS-776       |
| ⊗ | HALL, KOONTZ, ROSSI | ⊞ | ROSEN                  |
| • | LAMS-774            | ⊞ | A. PHILLIPS } LAMS-774 |
|   |                     | ⊞ | TASCHEK                |
|   |                     | ○ | NYER, LAMS-938         |

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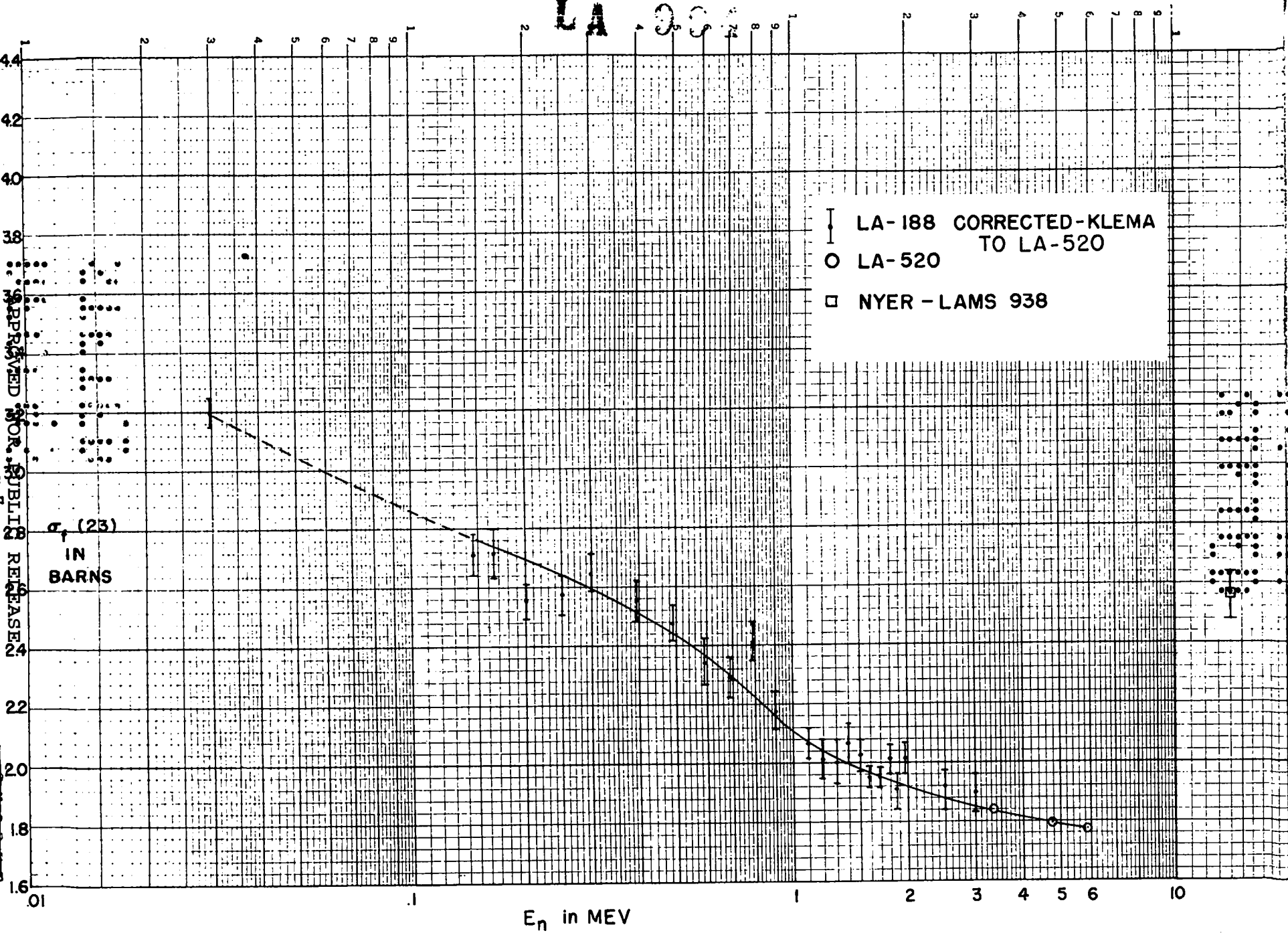
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$E_n$  (MEV)



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1

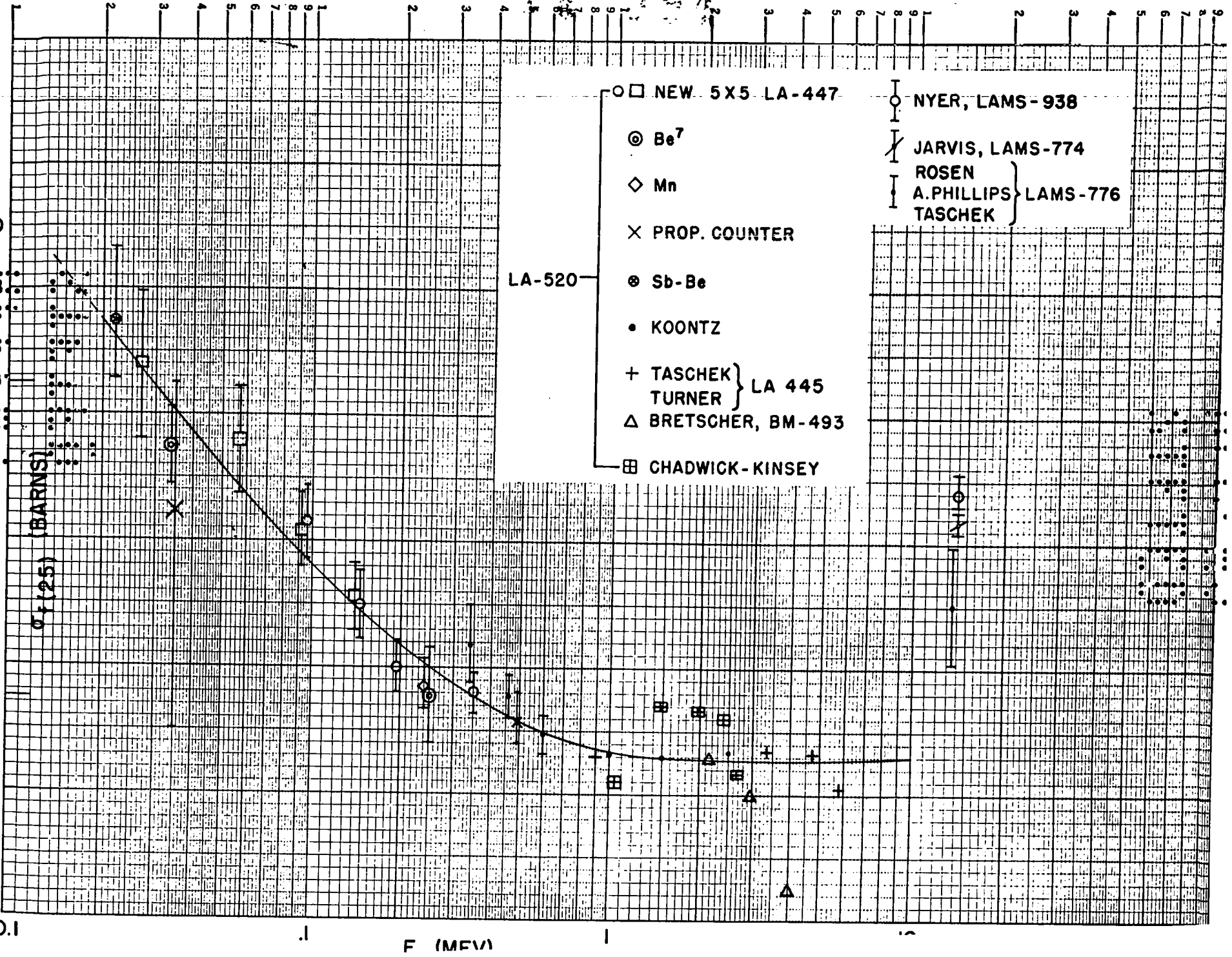


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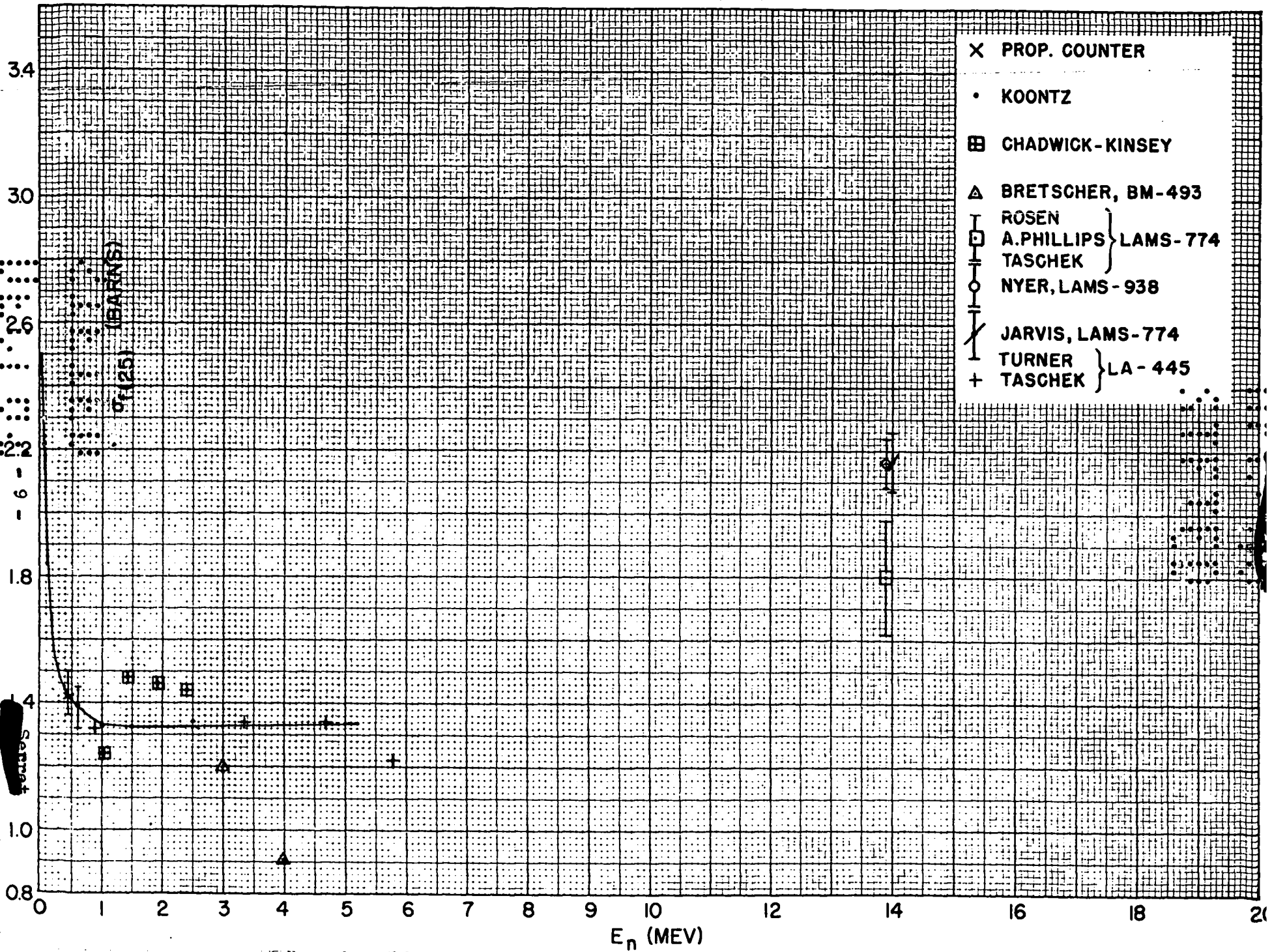


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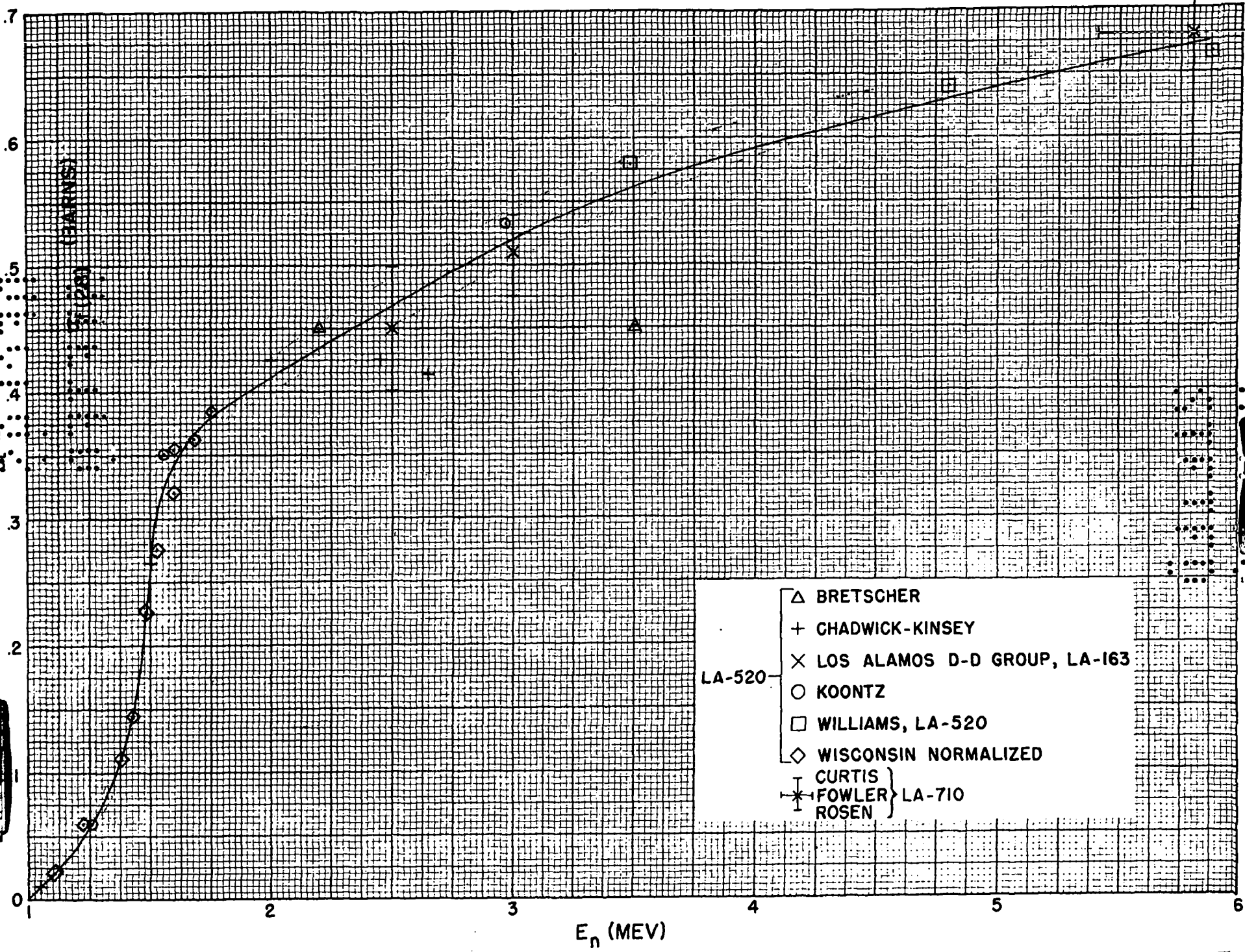


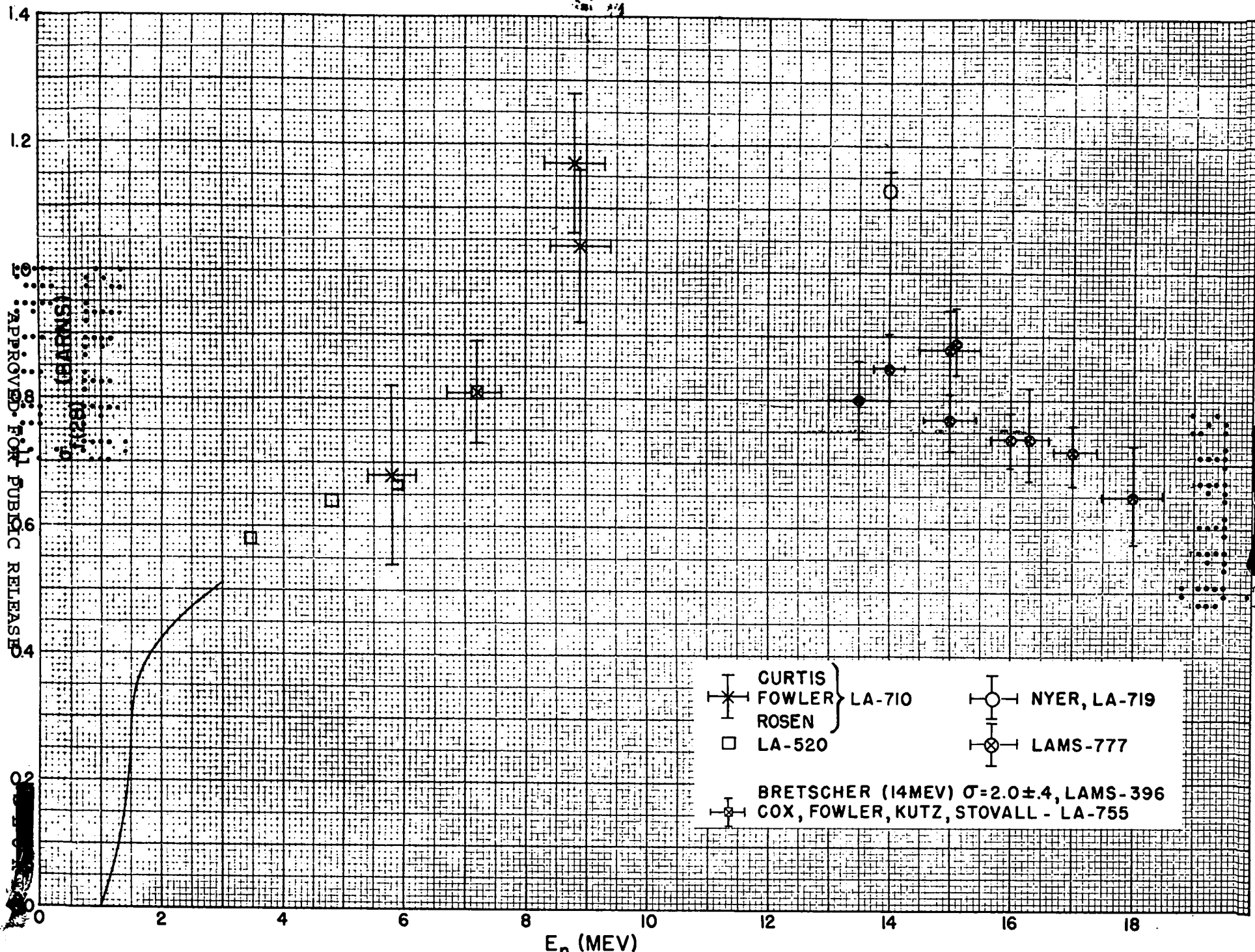
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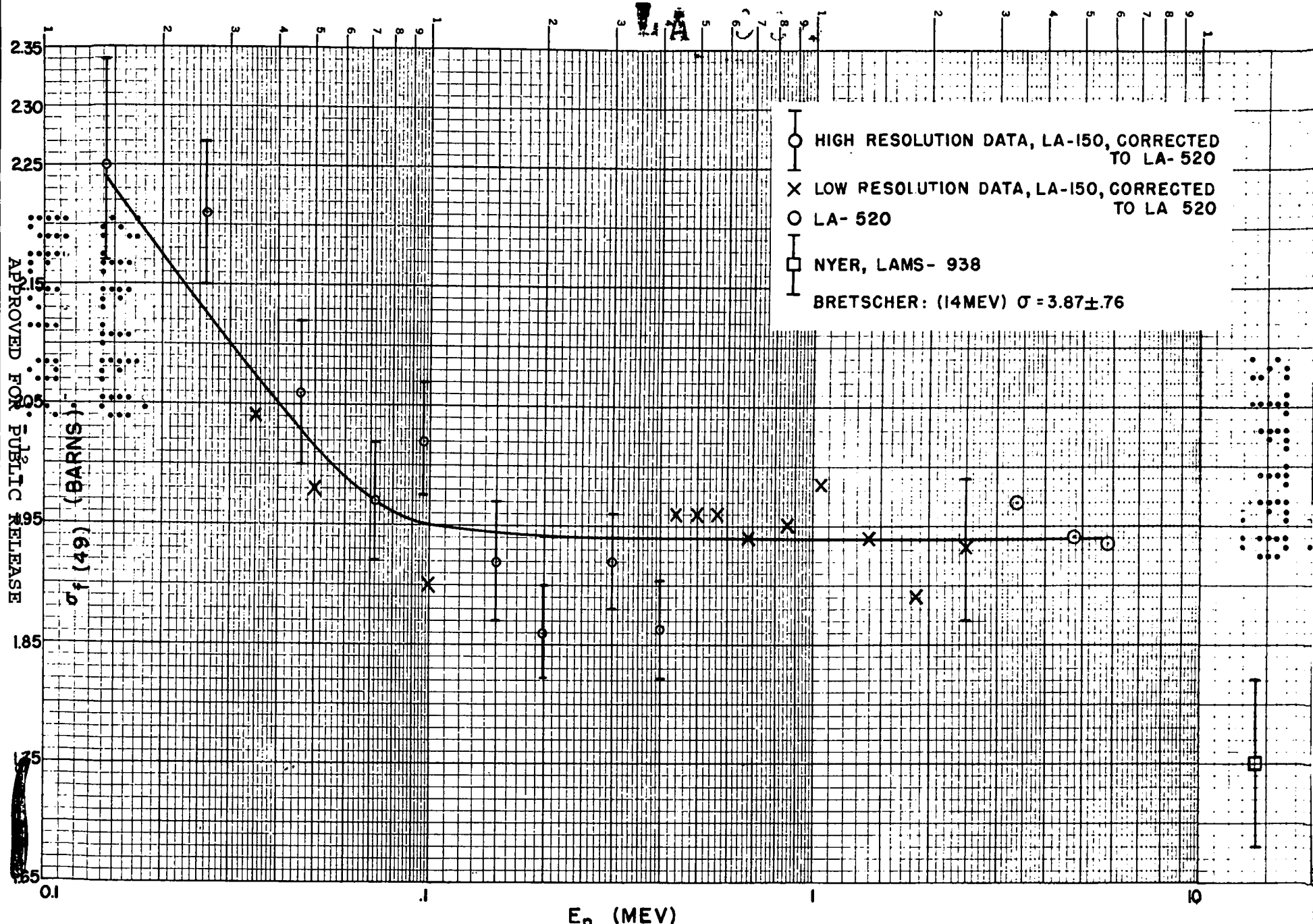


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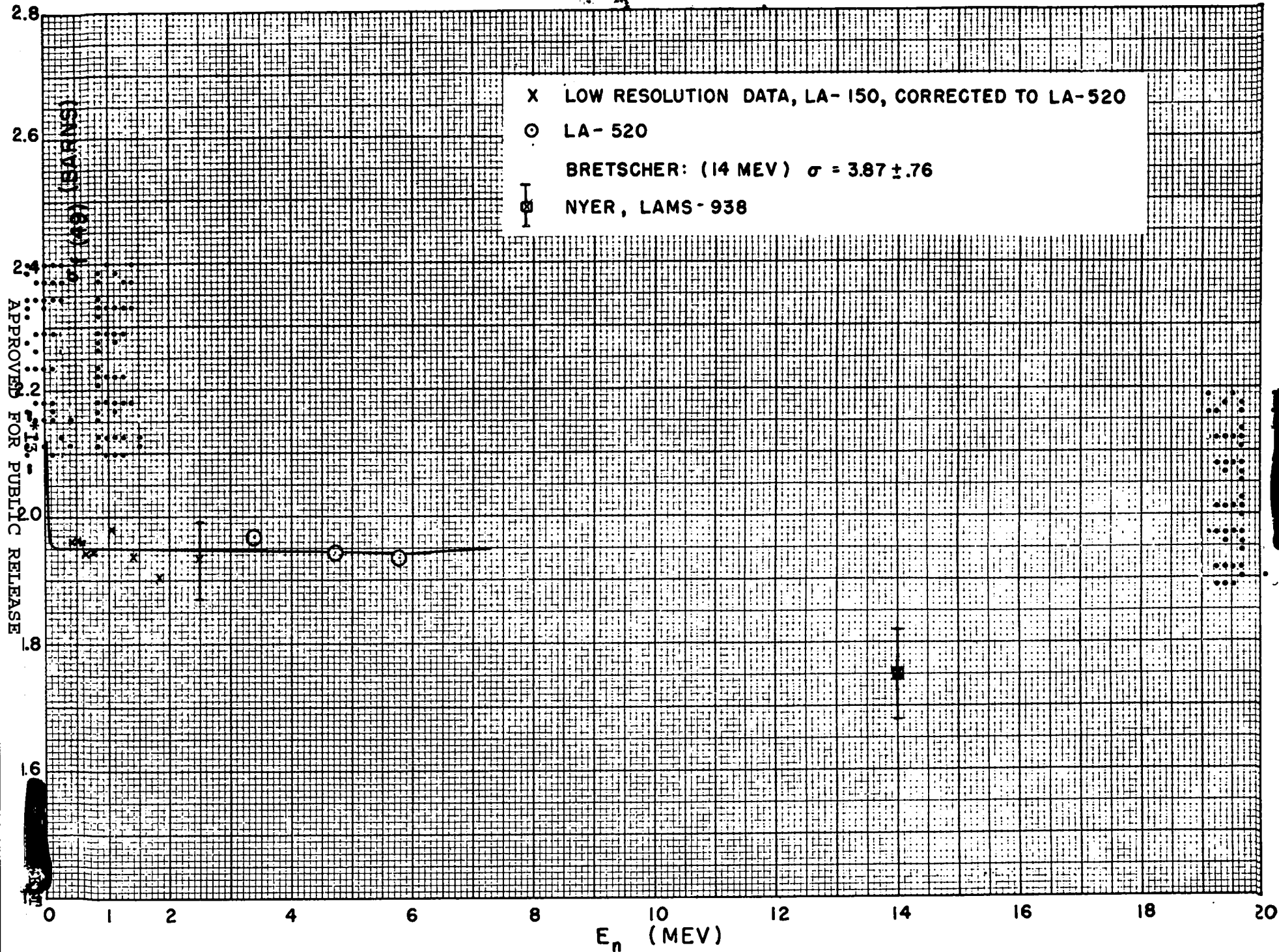
\* CURTIS } LA-710  
 \* FOWLER }  
 \* ROSEN }  
 □ LA-520  
 ○ NYER, LA-719  
 ⊗ LAMS-777  
 ⊠ BRETSCHER (14MEV)  $\sigma = 2.0 \pm .4$ , LAMS-396  
 ⊠ COX, FOWLER, KUTZ, STOVALL - LA-755

$E_n$  (MEV)



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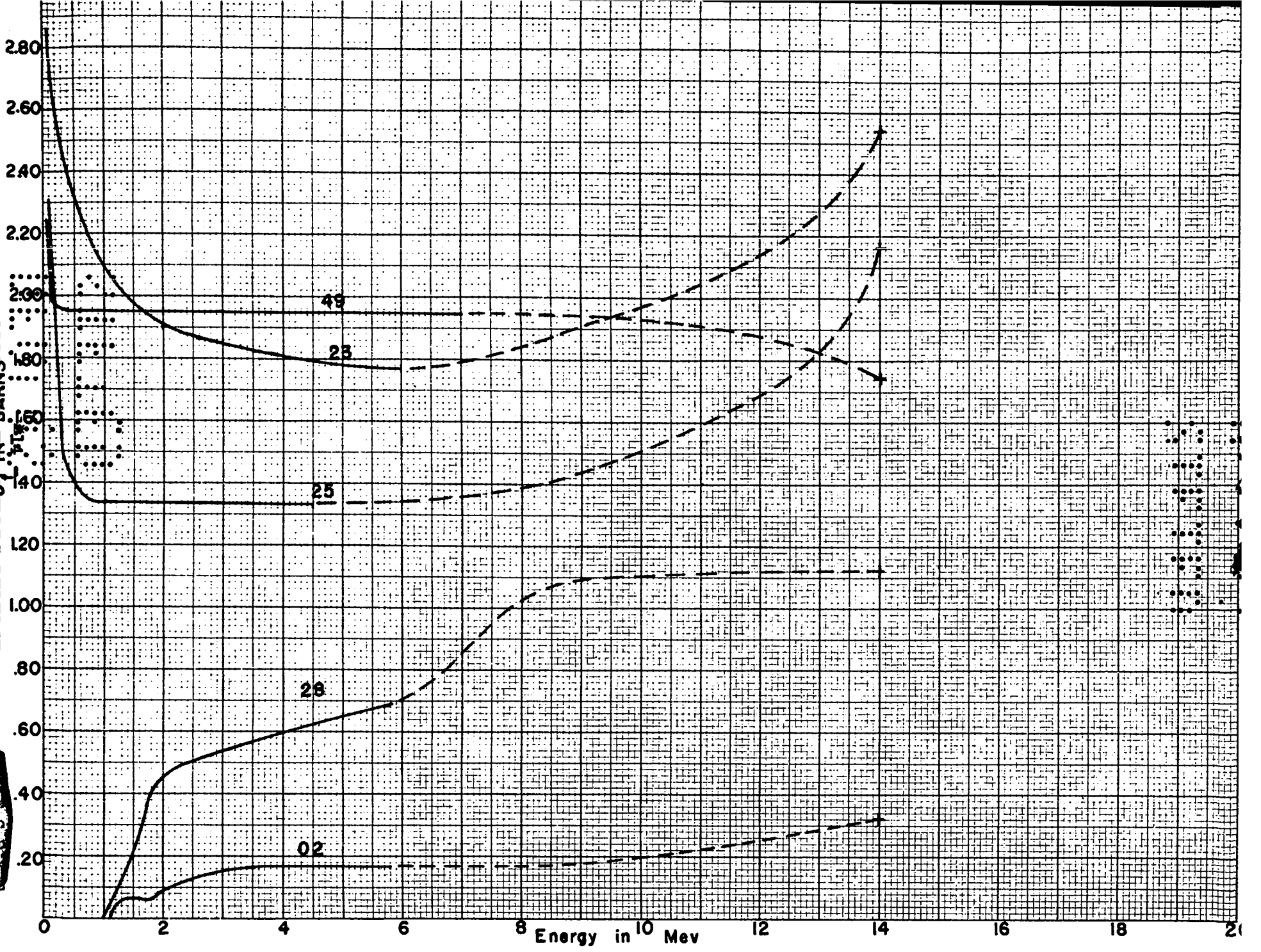
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