SUMMARY OF FAST FISSION CROSS SECTIONS

By

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By

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Physics Fission

APPROVED FOR PUBLIC RELEASE
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02, 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.

\[ \frac{\sigma_{28}}{\sigma_{22}} \] The points labelled LAMS-774 were obtained from the ratios \( \frac{\sigma_{28}}{\sigma_{25}}, \frac{\sigma_{22}}{\sigma_{25}} \) 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 E 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
EK-493 Bretscher
\( \sigma_{02} \) 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
LAMS-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, EM-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
EM-493 Bretscher
LAMS-938 Nyer
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 "i" Building. It is believed that the LAMS-777 values from 13.5 to 18.0 keV are slightly low.

References:
LA-163 = 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 Moyer
LA-755 = Cox, Fowler, Kutz, Stovall

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 Moyer
LA-39, TASCHEK CORR. TO LA-520 $\sigma_{28}$ VALUES

- LA-520, WILLIAMS
- ROSEN
- LAMS-774, A.PHILLIPS CORR. TO LA-719 $\sigma_{28}$ VALUES
- TASCHEK
- LAMS-776, JARVIS
- LAMS-938, NYER
BRETSCHER (14 MEV) $\sigma = 2.0 \pm 0.4$, LAMS-396

COX, FOWLER, KUTZ, STOVALL - LA-755

CURTIS

FOWLER LA-710

ROSEN

LA-520

NYER, LA-719

LAMS-777
HIGH RESOLUTION DATA, LA-150, CORRECTED TO LA-520
× LOW RESOLUTION DATA, LA-150, CORRECTED TO LA 520
○ LA-520
□ NYER, LAMS-938

BRETSCHER: (14 MEV) \( \sigma = 3.87 \pm 0.76 \)
X  LOW RESOLUTION DATA, LA-150, CORRECTED TO LA-520
○  LA-520
  
  BRETSCHER: (14 MEV) $\sigma = 3.87 \pm 0.76$

○  NYER, LAMS-938