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**Memo CP-C/378**

**DATE:** August 3, 2006  
**TO:** Distribution  
**FROM:** D. Rochman  
**SUBJECT:** Deficiencies in CSISRS (EXFOR)

Thanks to the feedback from our users, we present some deficiencies in the CSISRS compilations. Shown below are the accession numbers and details. The criterion for an entry in the following list of errors in CSISRS files is the presence of a non-physical cross section. For instance, above 1 MeV, a cross section higher than 3 barns is not physical. Corrections should be made by responsible centers. It would be useful, in the future to have a built-in capability in our checking code to avoid this sort of mistakes.

| Author                  | Year | Energy and cross section                | Accession # |
|-------------------------|------|-----------------------------------------|-------------|
| G.C.BONAZZOLA,ET.AL. (6 | 1965 | 14.1999998 MeV xs= 5700. mb +- 2300.    | 21080 8     |
| G.C.BONAZZOLA,ET.AL. (6 | 1965 | 14.1999998 MeV xs= 17600. mb +- 2000.   | 21080 8     |
| G.C.BONAZZOLA,ET.AL. (6 | 1965 | 14.1999998 MeV xs= 15900. mb +- 1400.   | 21080 8     |
| G.C.BONAZZOLA,ET.AL. (6 | 1965 | 14.1999998 MeV xs= 18400. mb +- 2400.   | 21080 8     |
| G.C.BONAZZOLA,ET.AL. (6 | 1965 | 14.1999998 MeV xs= 15900. mb +- 1400.   | 21080 8     |
| G.C.BONAZZOLA,ET.AL. (6 | 1965 | 14.1999998 MeV xs= 18400. mb +- 2400.   | 21080 8     |
| G.C.BONAZZOLA,ET.AL. (6 | 1965 | 14.1999998 MeV xs= 5700. mb +- 2300.    | 21080 8     |
| G.C.BONAZZOLA,ET.AL. (6 | 1965 | 14.1999998 MeV xs= 17600. mb +- 2000.   | 21080 8     |
| J.H.TOWLE,ET.AL. (62)   | 1962 | 3.97000003 MeV xs= 70000. mb +- 8000.   | 21089 18    |
| J.H.TOWLE,ET.AL. (62)   | 1962 | 3.97000003 MeV xs= 140000. mb +- 13000. | 21089 18    |
| J.H.TOWLE,ET.AL. (62)   | 1962 | 3.97000003 MeV xs= 70000. mb +- 8000.   | 21089 18    |
| J.H.TOWLE,ET.AL. (62)   | 1962 | 3.97000003 MeV xs= 100000. mb +- 9000.  | 21089 18    |
| J.H.TOWLE,ET.AL. (62)   | 1962 | 3.97000003 MeV xs= 140000. mb +- 13000. | 21089 18    |
| J.H.TOWLE,ET.AL. (62)   | 1962 | 3.97000003 MeV xs= 180000. mb +- 15000. | 21089 18    |
| J.H.TOWLE,ET.AL. (62)   | 1962 | 3.97000003 MeV xs= 180000. mb +- 15000. | 21089 18    |
| J.H.TOWLE,ET.AL. (62)   | 1962 | 3.97000003 MeV xs= 100000. mb +- 9000.  | 21089 18    |
| E.T.BOOTH,ET.AL. (37)   | 1937 | 2.5 MeV xs= 7400. mb +- 518.            | 21786 3     |
| E.T.BOOTH,ET.AL. (37)   | 1937 | 2.5 MeV xs= 7400. mb +- 518. 0.         | 21786 3     |
| X.C.CAO (62)            | 1962 | 14. MeV xs= 540000. mb +- 162000.       | 22616 2     |
| X.C.CAO (62)            | 1962 | 14. MeV xs= 540000. mb +- 162000. 0.    | 22616 2     |
| J.JANCZYSZYN,ET.AL. (73 | 1973 | 14. MeV xs= 5800. mb +- 3000. 0.        | 30322 16    |
| J.JANCZYSZYN,ET.AL. (73 | 1973 | 14. MeV xs= 5800. mb +- 3000.           | 30322 16    |
| S.K.MUKHERJEE,ET.AL. (6 | 1961 | 14.8000002 MeV xs= 6500. mb +- 0. 0.    | 31161 10    |
| S.K.MUKHERJEE,ET.AL. (6 | 1961 | 14.8000002 MeV xs= 6500. mb +- 0.       | 31161 10    |

|                          |      |                                         |          |
|--------------------------|------|-----------------------------------------|----------|
| A.I.LEIPUNSKIJ, (58)     | 1958 | 2.69989991 MeV xs= 50000. mb +- 0.      | 40244 18 |
| A.I.LEIPUNSKIJ, (58)     | 1958 | 2.69989991 MeV xs= 50000. mb +- 0. 0.   | 40244 18 |
| A.I.LEIPUNSKIJ, (58)     | 1958 | 4. MeV xs= 25000. mb +- 0.              | 40244 59 |
| A.I.LEIPUNSKIJ, (58)     | 1958 | 4. MeV xs= 25000. mb +- 0. 0.           | 40244 59 |
| G.A.PROKOPETS (80)       | 1980 | 20.6000004 MeV xs= 57000. mb +- 11400.  | 41102 9  |
| G.A.PROKOPETS (80)       | 1980 | 20.6000004 MeV xs= 5450. mb +- 1090.    | 41102 10 |
| S.P.SIMAKOV,ET.AL. (92)  | 1992 | 14.1000004 MeV xs= 5165. mb +- 300.     | 41156 8  |
| S.P.SIMAKOV,ET.AL. (92)  | 1992 | 14.1000004 MeV xs= 5220. mb +- 310.     | 41156 11 |
| P.M.GOPYCH,ET.AL. (94)   | 1994 | 14.6000004 MeV xs= 16000. mb +- 4000.   | 41163 3  |
| P.M.GOPYCH,ET.AL. (94)   | 1994 | 14.6000004 MeV xs= 10000. mb +- 4000.   | 41163 6  |
| P.M.GOPYCH,ET.AL. (94)   | 1994 | 14.6000004 MeV xs= 4500. mb +- 400.     | 41163 7  |
| P.M.GOPYCH,ET.AL. (94)   | 1994 | 14.6000004 MeV xs= 16000. mb +- 4000.   | 411633   |
| P.M.GOPYCH,ET.AL. (94)   | 1994 | 14.6000004 MeV xs= 10000. mb +- 4000.   | 411636   |
| P.M.GOPYCH,ET.AL. (94)   | 1994 | 14.6000004 MeV xs= 4500. mb +- 400. 0.  | 411637   |
| N.G.ZAITSEVA,ET.AL. (90) | 1990 | 9.19999981 MeV xs= 39000. mb +- 7800.   | A0569 3  |
| N.G.ZAITSEVA,ET.AL. (90) | 1990 | 57.7999992 MeV xs= 9000. mb +- 1800.    | A0569 3  |
| N.G.ZAITSEVA,ET.AL. (90) | 1990 | 62.7000008 MeV xs= 8000. mb +- 1600.    | A0569 3  |
| N.G.ZAITSEVA,ET.AL. (90) | 1990 | 61.0999985 MeV xs= 8000. mb +- 1600.    | A0569 3  |
| N.G.ZAITSEVA,ET.AL. (90) | 1990 | 59.5 MeV xs= 9000. mb +- 1800.          | A0569 3  |
| N.G.ZAITSEVA,ET.AL. (90) | 1990 | 56.0999985 MeV xs= 9000. mb +- 1800.    | A0569 3  |
| N.G.ZAITSEVA,ET.AL. (90) | 1990 | 54.4000015 MeV xs= 12000. mb +- 2400.   | A0569 3  |
| N.G.ZAITSEVA,ET.AL. (90) | 1990 | 52.5999985 MeV xs= 11000. mb +- 2200.   | A0569 3  |
| N.G.ZAITSEVA,ET.AL. (90) | 1990 | 50.7000008 MeV xs= 10000. mb +- 2000.   | A0569 3  |
| N.G.ZAITSEVA,ET.AL. (90) | 1990 | 48.7999992 MeV xs= 11000. mb +- 2200.   | A0569 3  |
| N.G.ZAITSEVA,ET.AL. (90) | 1990 | 46.9000015 MeV xs= 11000. mb +- 2200.   | A0569 3  |
| N.G.ZAITSEVA,ET.AL. (90) | 1990 | 44.9000015 MeV xs= 12000. mb +- 2400.   | A0569 3  |
| N.G.ZAITSEVA,ET.AL. (90) | 1990 | 42.7999992 MeV xs= 15000. mb +- 3000.   | A0569 3  |
| N.G.ZAITSEVA,ET.AL. (90) | 1990 | 40.5999985 MeV xs= 14000. mb +- 2800.   | A0569 3  |
| N.G.ZAITSEVA,ET.AL. (90) | 1990 | 38.2999992 MeV xs= 16000. mb +- 3200.   | A0569 3  |
| N.G.ZAITSEVA,ET.AL. (90) | 1990 | 36. MeV xs= 15000. mb +- 3000.          | A0569 3  |
| N.G.ZAITSEVA,ET.AL. (90) | 1990 | 33.5999985 MeV xs= 18000. mb +- 3600.   | A0569 3  |
| N.G.ZAITSEVA,ET.AL. (90) | 1990 | 31. MeV xs= 22000. mb +- 4400.          | A0569 3  |
| N.G.ZAITSEVA,ET.AL. (90) | 1990 | 28.3999996 MeV xs= 26000. mb +- 5200.   | A0569 3  |
| N.G.ZAITSEVA,ET.AL. (90) | 1990 | 25.2999992 MeV xs= 29000. mb +- 5800.   | A0569 3  |
| N.G.ZAITSEVA,ET.AL. (90) | 1990 | 22.2999992 MeV xs= 38000. mb +- 7600.   | A0569 3  |
| N.G.ZAITSEVA,ET.AL. (90) | 1990 | 18.7000008 MeV xs= 90000. mb +- 18000.  | A0569 3  |
| N.G.ZAITSEVA,ET.AL. (90) | 1990 | 14.3999996 MeV xs= 178000. mb +- 35600. | A0569 3  |
| N.G.ZAITSEVA,ET.AL. (90) | 1990 | 21.2000008 MeV xs= 37000. mb +- 7400.   | A0569 4  |
| N.G.ZAITSEVA,ET.AL. (90) | 1990 | 17.8999996 MeV xs= 9000. mb +- 1800.    | A0569 4  |
| N.G.ZAITSEVA,ET.AL. (90) | 1990 | 24.1000004 MeV xs= 24000. mb +- 4800.   | A0569 4  |
| N.G.ZAITSEVA,ET.AL. (90) | 1990 | 27. MeV xs= 17000. mb +- 3400.          | A0569 4  |
| N.G.ZAITSEVA,ET.AL. (90) | 1990 | 29.6000004 MeV xs= 44000. mb +- 8800.   | A0569 4  |
| N.G.ZAITSEVA,ET.AL. (90) | 1990 | 32. MeV xs= 53000. mb +- 10600.         | A0569 4  |
| N.G.ZAITSEVA,ET.AL. (90) | 1990 | 34.2999992 MeV xs= 47000. mb +- 9400.   | A0569 4  |
| N.G.ZAITSEVA,ET.AL. (90) | 1990 | 36.5 MeV xs= 37000. mb +- 7400.         | A0569 4  |
| N.G.ZAITSEVA,ET.AL. (90) | 1990 | 38.5999985 MeV xs= 26000. mb +- 5200.   | A0569 4  |
| N.G.ZAITSEVA,ET.AL. (90) | 1990 | 40.5999985 MeV xs= 19000. mb +- 3800.   | A0569 4  |
| N.G.ZAITSEVA,ET.AL. (90) | 1990 | 42.5999985 MeV xs= 15000. mb +- 3000.   | A0569 4  |

|                         |      |                                               |         |
|-------------------------|------|-----------------------------------------------|---------|
| N.G.ZAITSEVA,ET.AL. (90 | 1990 | 44.4000015 MeV xs= 14000. mb +- 2800.         | A0569 4 |
| N.G.ZAITSEVA,ET.AL. (90 | 1990 | 46.2999992 MeV xs= 12000. mb +- 2400.         | A0569 4 |
| N.G.ZAITSEVA,ET.AL. (90 | 1990 | 48.0999985 MeV xs= 12000. mb +- 2400.         | A0569 4 |
| N.G.ZAITSEVA,ET.AL. (90 | 1990 | 49.7999992 MeV xs= 12000. mb +- 2400.         | A0569 4 |
| N.G.ZAITSEVA,ET.AL. (90 | 1990 | 51.5 MeV xs= 10000. mb +- 2000.               | A0569 4 |
| N.G.ZAITSEVA,ET.AL. (90 | 1990 | 53.2000008 MeV xs= 11000. mb +- 2200.         | A0569 4 |
| N.G.ZAITSEVA,ET.AL. (90 | 1990 | 54.7999992 MeV xs= 9000. mb +- 1800.          | A0569 4 |
| N.G.ZAITSEVA,ET.AL. (90 | 1990 | 56.4000015 MeV xs= 10000. mb +- 2000.         | A0569 4 |
| N.G.ZAITSEVA,ET.AL. (90 | 1990 | 58. MeV xs= 10000. mb +- 2000.                | A0569 4 |
| N.G.ZAITSEVA,ET.AL. (90 | 1990 | 59.5 MeV xs= 9000. mb +- 1800.                | A0569 4 |
| N.G.ZAITSEVA,ET.AL. (90 | 1990 | 63.9000015 MeV xs= 9000. mb +- 1800.          | A0569 4 |
| N.G.ZAITSEVA,ET.AL. (90 | 1990 | 62.5 MeV xs= 10000. mb +- 2000.               | A0569 4 |
| N.G.ZAITSEVA,ET.AL. (90 | 1990 | 61. MeV xs= 10000. mb +- 2000.                | A0569 4 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 9.80000019 MeV xs= 12800. mb +- 1.89999998    | E1411 2 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 12.1999998 MeV xs= 183100. mb +- 16.5         | E1411 2 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 13. MeV xs= 284600. mb +- 21.89999996         | E1411 2 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 13.8999996 MeV xs= 368400. mb +- 27.60000004  | E1411 2 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 14.6000004 MeV xs= 447000. mb +- 31.30000011  | E1411 2 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 15.5 MeV xs= 449300. mb +- 35.90000015        | E1411 2 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 11.1999998 MeV xs= 77600. mb +- 8.60000038    | E1411 2 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 9. MeV xs= 4600. mb +- 1.5                    | E1411 3 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 18. MeV xs= 1199000. mb +- 110.               | E1411 3 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 15.6000004 MeV xs= 762900. mb +- 80.5         | E1411 3 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 14.6000004 MeV xs= 532000. mb +- 90.          | E1411 3 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 13.6000004 MeV xs= 360100. mb +- 65.          | E1411 3 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 12.5 MeV xs= 256000. mb +- 54.                | E1411 3 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 12. MeV xs= 157600. mb +- 40.                 | E1411 3 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 11.3999996 MeV xs= 109900. mb +- 35.          | E1411 3 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 10.1999998 MeV xs= 39200. mb +- 10.           | E1411 3 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 11.1999998 MeV xs= 70100. mb +- 23.           | E1411 4 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 12.1000004 MeV xs= 140100. mb +- 36.          | E1411 4 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 15.6000004 MeV xs= 695000. mb +- 85.          | E1411 4 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 13.1000004 MeV xs= 238900. mb +- 54.          | E1411 4 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 14. MeV xs= 374800. mb +- 65.                 | E1411 4 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 14.8000002 MeV xs= 431200. mb +- 75.          | E1411 4 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 10.1999998 MeV xs= 29800. mb +- 11.           | E1411 4 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 12.1999998 MeV xs= 114200. mb +- 34.20000008  | E1411 5 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 11.1999998 MeV xs= 44200. mb +- 20.09999985   | E1411 5 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 13. MeV xs= 204600. mb +- 42.29999992         | E1411 5 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 13.8999996 MeV xs= 285300. mb +- 38.40000015  | E1411 5 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 14.6000004 MeV xs= 424600. mb +- 46.5         | E1411 5 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 15.5 MeV xs= 449000. mb +- 52.                | E1411 5 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 9.80000019 MeV xs= 6700. mb +- 3.5            | E1411 5 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 18. MeV xs= 134700. mb +- 35.                 | E1411 6 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 12. MeV xs= 598400. mb +- 85.                 | E1411 6 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 10.1999998 MeV xs= 16299.999 mb +- 3.29999995 | E1411 7 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 13.1000004 MeV xs= 92800. mb +- 15.79999992   | E1411 7 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 14.3999996 MeV xs= 123300. mb +- 20.          | E1411 7 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 15.6000004 MeV xs= 152400. mb +- 22.80000011  | E1411 7 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 18. MeV xs= 342500. mb +- 44.5                | E1411 7 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 11.6999998 MeV xs= 56700. mb +- 10.5          | E1411 7 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 12. MeV xs= 64500. mb +- 10.30000002          | E1411 8 |

|                         |      |                                             |          |
|-------------------------|------|---------------------------------------------|----------|
| T.Ohtsuki,ET.AL. (91)   | 1991 | 9. MeV xs= 10200. mb +- 3.29999995          | E1411 8  |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 13.6999998 MeV xs= 418800. mb +- 50.5       | E1411 8  |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 14. MeV xs= 455100. mb +- 20.               | E1411 8  |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 15.5 MeV xs= 625300. mb +- 22.8000011       | E1411 8  |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 16. MeV xs= 671000. mb +- 44.5              | E1411 8  |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 11. MeV xs= 72800. mb +- 10.3000002         | E1411 8  |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 12. MeV xs= 187300. mb +- 15.7999992        | E1411 8  |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 10. MeV xs= 28900. mb +- 10.5               | E1411 9  |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 12. MeV xs= 125300. mb +- 40.               | E1411 9  |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 10.3999996 MeV xs= 27500. mb +- 10.5        | E1411 9  |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 15.6000004 MeV xs= 385500. mb +- 102.5      | E1411 9  |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 14. MeV xs= 202600. mb +- 62.7999992        | E1411 10 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 19.5 MeV xs= 1246000. mb +- 149.            | E1411 10 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 28.7999992 MeV xs= 1874000. mb +- 225.      | E1411 10 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 27.5 MeV xs= 1905000. mb +- 229.            | E1411 10 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 9.80000019 MeV xs= 49500. mb +- 9.5         | E1411 10 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 25.5 MeV xs= 1894000. mb +- 233.            | E1411 10 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 24.6000004 MeV xs= 1668000. mb +- 215.      | E1411 10 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 23.6000004 MeV xs= 1689000. mb +- 236.      | E1411 10 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 22.5 MeV xs= 1651000. mb +- 198.            | E1411 10 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 21.6000004 MeV xs= 1530000. mb +- 229.      | E1411 10 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 20.5 MeV xs= 1365000. mb +- 204.            | E1411 10 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 32. MeV xs= 1850000. mb +- 250.             | E1411 10 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 18.5 MeV xs= 1217000. mb +- 158.            | E1411 10 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 17.5 MeV xs= 1210000. mb +- 169.            | E1411 10 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 16.5 MeV xs= 981000. mb +- 117.             | E1411 10 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 15.5 MeV xs= 890000. mb +- 98.              | E1411 10 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 15.1000004 MeV xs= 854000. mb +- 111.       | E1411 10 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 14.6999998 MeV xs= 721000. mb +- 85.5       | E1411 10 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 14.3999996 MeV xs= 685000. mb +- 82.        | E1411 10 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 14.1999998 MeV xs= 576000. mb +- 76.5       | E1411 10 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 13.6999998 MeV xs= 497500. mb +- 43.5       | E1411 10 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 13.5 MeV xs= 505000. mb +- 65.5             | E1411 10 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 13.1999998 MeV xs= 436600. mb +- 52.4000015 | E1411 10 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 12.8000002 MeV xs= 339000. mb +- 44.        | E1411 10 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 12.6000004 MeV xs= 351500. mb +- 42.        | E1411 10 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 11.8999996 MeV xs= 233000. mb +- 30.3000011 | E1411 10 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 11.1999998 MeV xs= 155500. mb +- 27.5       | E1411 10 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 10.8000002 MeV xs= 142400. mb +- 18.5       | E1411 10 |
| T.Ohtsuki,ET.AL. (91)   | 1991 | 26.5 MeV xs= 1815000. mb +- 246.            | E1411 10 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 10.1999998 MeV xs= 65300.0039 mb +- 10.     | M0420 2  |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 3.86899996 MeV xs= 12126. mb +- 56.         | M0420 2  |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 4.32700014 MeV xs= 12128. mb +- 30.5        | M0420 2  |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 4.82999992 MeV xs= 12258. mb +- 23.5        | M0420 2  |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 5.33300018 MeV xs= 12394. mb +- 21.         | M0420 2  |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 5.83699989 MeV xs= 12561. mb +- 20.5        | M0420 2  |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 27.4699993 MeV xs= 19408. mb +- 206.5       | M0420 2  |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 26.9029999 MeV xs= 19300. mb +- 195.5       | M0420 2  |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 26.3549995 MeV xs= 19156. mb +- 187.5       | M0420 2  |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 25.8250008 MeV xs= 18658. mb +- 177.5       | M0420 2  |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 25.3120003 MeV xs= 18709. mb +- 176.        | M0420 2  |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 6.34800005 MeV xs= 12789. mb +- 21.5        | M0420 2  |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 23.9890003 MeV xs= 18791. mb +- 136.5       | M0420 2  |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 23.3139992 MeV xs= 18380. mb +- 131.        | M0420 2  |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 22.6700001 MeV xs= 18362. mb +- 127.5       | M0420 2  |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 22.0550003 MeV xs= 18316. mb +- 124.        | M0420 2  |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 21.4680004 MeV xs= 17903. mb +- 117.5       | M0420 2  |

|                         |      |                    |                      |         |
|-------------------------|------|--------------------|----------------------|---------|
| N.K.SHERMAN,ET.AL. (80) | 1980 | 20.9069996 MeV xs= | 17868. mb +- 115.    | M0420 2 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 20.3700008 MeV xs= | 17850. mb +- 112.    | M0420 2 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 19.8560009 MeV xs= | 17920. mb +- 112.    | M0420 2 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 19.2859993 MeV xs= | 17412. mb +- 90.     | M0420 2 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 18.664999 MeV xs=  | 17324. mb +- 86.5    | M0420 2 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 18.0779991 MeV xs= | 17188. mb +- 84.     | M0420 2 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 17.5 MeV xs=       | 17093. mb +- 82.5    | M0420 2 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 16.9769993 MeV xs= | 16924. mb +- 78.     | M0420 2 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 16.4220009 MeV xs= | 16841. mb +- 68.5    | M0420 2 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 15.8400002 MeV xs= | 16683. mb +- 67.5    | M0420 2 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 15.2930002 MeV xs= | 16522. mb +- 64.5    | M0420 2 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 14.7799997 MeV xs= | 16302.999 mb +- 63.  | M0420 2 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 14.2530003 MeV xs= | 16124.001 mb +- 56.5 | M0420 2 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 13.7150002 MeV xs= | 15947. mb +- 54.     | M0420 2 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 13.1739998 MeV xs= | 15730. mb +- 47.5    | M0420 2 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 12.6289997 MeV xs= | 15562. mb +- 46.     | M0420 2 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 12.0880003 MeV xs= | 15380. mb +- 41.5    | M0420 2 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 11.5570002 MeV xs= | 15056. mb +- 40.     | M0420 2 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 11.0389996 MeV xs= | 14775. mb +- 36.5    | M0420 2 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 10.5139999 MeV xs= | 14507. mb +- 34.     | M0420 2 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 6.86999989 MeV xs= | 12990. mb +- 21.5    | M0420 2 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 9.47599983 MeV xs= | 14097. mb +- 30.     | M0420 2 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 8.93599987 MeV xs= | 13854. mb +- 28.5    | M0420 2 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 8.38199997 MeV xs= | 13601. mb +- 26.5    | M0420 2 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 7.93599987 MeV xs= | 13391. mb +- 24.5    | M0420 2 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 7.40399981 MeV xs= | 13171. mb +- 22.5    | M0420 2 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 9.99199963 MeV xs= | 14318. mb +- 32.     | M0420 2 |
|                         |      |                    |                      |         |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 24.6970005 MeV xs= | 18514. mb +- 137.5   | M0420 3 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 3.86899996 MeV xs= | 14846. mb +- 76.     | M0420 3 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 4.32700014 MeV xs= | 14781. mb +- 44.5    | M0420 3 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 4.82999992 MeV xs= | 14927. mb +- 33.5    | M0420 3 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 5.33300018 MeV xs= | 15091. mb +- 30.5    | M0420 3 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 5.83699989 MeV xs= | 15324. mb +- 29.5    | M0420 3 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 13.7150002 MeV xs= | 19861. mb +- 76.5    | M0420 3 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 6.34800005 MeV xs= | 15624. mb +- 31.     | M0420 3 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 6.86999989 MeV xs= | 15878. mb +- 32.     | M0420 3 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 7.40399981 MeV xs= | 16100. mb +- 33.5    | M0420 3 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 13.1739998 MeV xs= | 19669. mb +- 68.5    | M0420 3 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 8.38199997 MeV xs= | 16810. mb +- 39.     | M0420 3 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 8.93599987 MeV xs= | 17013. mb +- 42.5    | M0420 3 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 9.47599983 MeV xs= | 17402. mb +- 45.     | M0420 3 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 9.99199963 MeV xs= | 17673. mb +- 47.5    | M0420 3 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 10.5139999 MeV xs= | 17945. mb +- 50.     | M0420 3 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 11.0389996 MeV xs= | 18293. mb +- 54.     | M0420 3 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 11.5570002 MeV xs= | 18583. mb +- 58.5    | M0420 3 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 12.0880003 MeV xs= | 19137. mb +- 60.5    | M0420 3 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 12.6289997 MeV xs= | 19244. mb +- 66.     | M0420 3 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 14.2530003 MeV xs= | 20095. mb +- 80.5    | M0420 3 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 14.7799997 MeV xs= | 20165. mb +- 89.     | M0420 3 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 15.2930002 MeV xs= | 20299. mb +- 90.5    | M0420 3 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 15.8400002 MeV xs= | 20428. mb +- 93.     | M0420 3 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 16.4220009 MeV xs= | 20738. mb +- 94.5    | M0420 3 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 16.9769993 MeV xs= | 21082. mb +- 108.5   | M0420 3 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 17.5 MeV xs=       | 20972. mb +- 112.    | M0420 3 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 18.0779991 MeV xs= | 21532. mb +- 116.    | M0420 3 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 18.664999 MeV xs=  | 21395. mb +- 118.    | M0420 3 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 19.2859993 MeV xs= | 21513. mb +- 122.    | M0420 3 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 19.8560009 MeV xs= | 21905. mb +- 146.5   | M0420 3 |
| N.K.SHERMAN,ET.AL. (80) | 1980 | 20.3700008 MeV xs= | 22147. mb +- 148.5   | M0420 3 |

|                           |      |                                            |          |
|---------------------------|------|--------------------------------------------|----------|
| N.K.SHERMAN,ET.AL. (80)   | 1980 | 20.9069996 MeV xs= 22286. mb +- 154.       | M0420 3  |
| N.K.SHERMAN,ET.AL. (80)   | 1980 | 21.4680004 MeV xs= 22247. mb +- 157.       | M0420 3  |
| N.K.SHERMAN,ET.AL. (80)   | 1980 | 22.0550003 MeV xs= 22589. mb +- 161.       | M0420 3  |
| N.K.SHERMAN,ET.AL. (80)   | 1980 | 22.6700001 MeV xs= 22862. mb +- 167.5      | M0420 3  |
| N.K.SHERMAN,ET.AL. (80)   | 1980 | 23.3139992 MeV xs= 22906. mb +- 170.5      | M0420 3  |
| N.K.SHERMAN,ET.AL. (80)   | 1980 | 24.6970005 MeV xs= 23348. mb +- 182.       | M0420 3  |
| N.K.SHERMAN,ET.AL. (80)   | 1980 | 25.3120003 MeV xs= 23504. mb +- 229.5      | M0420 3  |
| N.K.SHERMAN,ET.AL. (80)   | 1980 | 25.8250008 MeV xs= 24074. mb +- 239.5      | M0420 3  |
| N.K.SHERMAN,ET.AL. (80)   | 1980 | 26.3549995 MeV xs= 24281. mb +- 242.       | M0420 3  |
| N.K.SHERMAN,ET.AL. (80)   | 1980 | 27.4699993 MeV xs= 24142. mb +- 250.999985 | M0420 3  |
| N.K.SHERMAN,ET.AL. (80)   | 1980 | 7.93599987 MeV xs= 16412. mb +- 37.        | M0420 3  |
| N.K.SHERMAN,ET.AL. (80)   | 1980 | 23.9890003 MeV xs= 23098. mb +- 173.       | M0420 3  |
| J.P.Alard,ET.AL. (75)     | 1975 | 26.9029999 MeV xs= 23803. mb +- 247.       | O0046 5  |
| M.ENKE,ET.AL. (99)        | 1999 | 600. MeV xs= 6550. mb +- 0.                | O0678 5  |
| M.ENKE,ET.AL. (99)        | 1999 | 1200. MeV xs= 5140. mb +- 0.               | O0678 9  |
| M.ENKE,ET.AL. (99)        | 1999 | 1200. MeV xs= 26700. mb +- 0.              | O0678 10 |
| M.ENKE,ET.AL. (99)        | 1999 | 1200. MeV xs= 28400. mb +- 0.              | O0678 12 |
| V.V.VERBINSKI,ET.AL. (69) | 1969 | 1200. MeV xs= 30400. mb +- 0.              | O0726 11 |
| N.L.Singh,ET.AL. (95)     | 1995 | 18.2999992 MeV xs= 7190. mb +- 0.          | O1116 2  |
| S.Mukherjee,ET.AL. (97)   | 1997 | 15.6000004 MeV xs= 5600. mb +- 672.        | O1180 2  |
| S.Mukherjee,ET.AL. (97)   | 1997 | 56.4500008 MeV xs= 4600. mb +- 414.        | O1180 2  |
| S.Mukherjee,ET.AL. (97)   | 1997 | 59.7099991 MeV xs= 4300. mb +- 387.        | O1180 2  |
| S.Mukherjee,ET.AL. (97)   | 1997 | 53.1800003 MeV xs= 5000. mb +- 500.        | O1180 2  |
| S.Mukherjee,ET.AL. (97)   | 1997 | 48.8600006 MeV xs= 4400. mb +- 308.        | O1180 2  |
|                           |      | 50.1699982 MeV xs= 4800. mb +- 384.        |          |

### Distribution

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