

$^{118}\text{Xe}$        $Z = 54$        $N = 64$       [link to full NNDC output](#)

Based on ENSDF from Dec 2018, and mass evaluation from 2016

BE = 988.248 ( 0.010) MeV

Qbeta+ = 2.892 ( 0.022) MeV

|          | Energy T | J+       | J- | J-other       | T1/2         |
|----------|----------|----------|----|---------------|--------------|
| -----    |          |          |    |               |              |
| S-alpha= | -1.385   | ( 0.030) |    |               |              |
| 118XE 1  | 0.000    | 0+       |    |               | 1 3.8 M 9    |
| 118XE 2  | 0.337    | 2+       |    |               | 2 45 PS 2    |
| 118XE 3  | 0.810    | 4+       |    |               | 3 7.48 PS 12 |
| 118XE 4  | 0.830    | 0+       |    |               | 4            |
| 118XE 5  | 0.928    | 2+       |    |               | 5            |
| 118XE 6  | 1.228    | 2+       |    |               | 6            |
| 118XE 7  |          |          |    | 1.366 (3)+    | 7            |
| 118XE 8  | 1.397    | 6+       |    |               | 8 3.2 PS 8   |
| 118XE 9  | 1.441    | 4+       |    |               | 9            |
| 118XE 10 |          |          |    | 1.640 1,2+    | 10           |
| -----    |          |          |    |               |              |
| 118XE 11 |          |          |    | 1.702 3,4+    | 11           |
| 118XE 12 | 1.721    | 0+       |    |               | 12           |
| 118XE 13 |          |          |    | 1.730 (4+)    | 13           |
| 118XE 14 |          |          |    | 1.838 1,2+    | 14           |
| 118XE 15 |          |          |    | 1.896         | 15           |
| 118XE 16 |          |          |    | 1.922 (5+)    | 16           |
| 118XE 17 |          |          |    | 1.995 (5)-    | 17           |
| 118XE 18 | 1.997    | 6+       |    |               | 18           |
| 118XE 19 | 2.073    | 8+       |    |               | 19 2.8 PS 10 |
| 118XE 20 |          |          |    | 2.129 1,2+    | 20           |
| -----    |          |          |    |               |              |
| 118XE 21 |          |          |    | 2.143 (3-,4+) | 21           |
| 118XE 22 |          |          |    | 2.164         | 22           |
| 118XE 23 |          |          |    | 2.419 (7)-    | 23           |
| 118XE 24 |          |          |    | 2.487         | 24           |
| 118XE 25 |          |          |    | 2.540 (5,6+)  | 25           |
| 118XE 26 |          |          |    | 2.560 (7)+    | 26           |
| 118XE 27 |          |          |    | 2.625 (8+)    | 27           |
| 118XE 28 | 2.816    | 10+      |    |               | 28 1.2 PS LT |
| 118XE 29 |          |          |    | 2.919 (9)-    | 29           |
| 118XE 30 |          |          |    | 2.997         | 30           |
| -----    |          |          |    |               |              |
| 118XE 31 |          |          |    | 3.206 (9-)    | 31           |
| 118XE 32 |          |          |    | 3.240 (9+)    | 32           |
| 118XE 33 |          |          |    | 3.255 (10+)   | 33           |
| 118XE 34 |          |          |    | 3.261         | 34           |
| 118XE 35 |          |          |    | 3.452         | 35           |
| 118XE 36 |          |          |    | 3.535         | 36           |

|          |   |        |          |       |  |        |       |    |  |
|----------|---|--------|----------|-------|--|--------|-------|----|--|
| 118XE 37 |   |        |          |       |  | 3.542  | (11)- | 37 |  |
| 118XE 38 |   | 3.592  | 12+      |       |  |        |       | 38 |  |
| 118XE 39 |   |        |          |       |  | 3.721  |       | 39 |  |
| 118XE 40 |   |        |          |       |  | 3.847  | (12+) | 40 |  |
| -----    |   |        |          |       |  |        |       |    |  |
| 118XE 41 |   |        |          |       |  | 4.040  |       | 41 |  |
| 118XE 42 |   |        |          |       |  | 4.173  |       | 42 |  |
| 118XE 43 |   |        |          |       |  | 4.261  | (13)- | 43 |  |
| 118XE 44 |   | 4.368  | 14+      |       |  |        |       | 44 |  |
| 118XE 45 |   |        |          |       |  | 4.385  |       | 45 |  |
| 118XE 46 |   |        |          |       |  | 4.539  | (14+) | 46 |  |
| 118XE 47 |   |        |          |       |  | 4.910  |       | 47 |  |
| S-p      | = | 4.932  | ( 0.028) | ----- |  |        |       |    |  |
| 118XE 48 |   |        |          |       |  | 5.058  |       | 48 |  |
| 118XE 49 |   |        |          |       |  | 5.156  | (16+) | 49 |  |
| 118XE 50 |   |        |          |       |  | 5.355  |       | 50 |  |
| -----    |   |        |          |       |  |        |       |    |  |
| 118XE 51 |   |        |          |       |  | 5.925  |       | 51 |  |
| 118XE 52 |   |        |          |       |  | 6.003  |       | 52 |  |
| 118XE 53 |   |        |          |       |  | 6.811  |       | 53 |  |
| 118XE 54 |   |        |          |       |  | 6.934  |       | 54 |  |
| S-2p     | = | 7.388  | ( 0.030) | ----- |  |        |       |    |  |
| 118XE 55 |   |        |          |       |  | 7.671  |       | 55 |  |
| 118XE 56 |   |        |          |       |  | 7.957  |       | 56 |  |
| 118XE 57 |   |        |          |       |  | 9.072  |       | 57 |  |
| 118XE 58 |   |        |          |       |  | 10.270 |       | 58 |  |
| 118XE 59 |   |        |          |       |  | 11.554 |       | 59 |  |
| S-n      | = | 11.965 | ( 0.015) | ----- |  |        |       |    |  |
| 118XE 60 |   |        |          |       |  | 12.815 |       | 60 |  |
| -----    |   |        |          |       |  |        |       |    |  |
| 118XE 61 |   |        |          |       |  | 14.087 |       | 61 |  |
| 118XE 62 |   |        |          |       |  | 15.399 |       | 62 |  |

S-p = 4.932 ( 0.028)-----  
S-n = 11.965 ( 0.015)-----  
S-2p = 7.388 ( 0.030)-----  
S-2n = 21.175 ( 0.017)-----  
S-alpha= -1.385 ( 0.030)-----

S+p = -1.515 ( 0.017)  
S+n = -8.787 ( 0.015)  
S+2p = -5.387 ( 0.300)  
S+2n = -20.236 ( 0.016)  
S+alpha = 1.045 ( 0.030)

gap p = 3.417 ( 0.033)  
gap n = 3.178 ( 0.021)  
gap 2p = 2.001 ( 0.302)  
gap 2n = 0.939 ( 0.023)

gap alpha = -0.339 ( 0.042)