

${}^4\text{He}({}^3\text{He}, {}^3\text{He}), ({}^3\text{He}, \text{p})$ 2002Ti10,1984Aj01

| Type | Author | History | Citation | Literature Cutoff Date |
|-----------------|-----------------------------------|---------|-------------------|------------------------|
| Full Evaluation | Hu, Tilley, Kelley, Godwin et al. | | NP A708, 3 (2002) | 23-Aug-2001 |

1958Mi92: scattering of ${}^3\text{He}$ from ${}^4\text{He}$ and states in ${}^7\text{Be}$.

1963To04: scattering of ${}^3\text{He}$ from ${}^4\text{He}$, deduced nuclear properties.

1967Ha08: ${}^4\text{He}({}^3\text{He}, \text{p})$ E=13.81-18.45 MeV, measured $\sigma(E)$, ${}^7\text{Be}$ deduced levels, J, π , L, T, level- Γ , S.

1967Sp10: ${}^4\text{He}({}^3\text{He}, {}^3\text{He})$ E=4.6-14.75, 14.74-18 MeV, ${}^4\text{He}({}^3\text{He}, \text{p})$ E=8-18 MeV, measured $\sigma(E, \theta)$. ${}^7\text{Be}$ deduced levels, J, π .

1978Ba75: ${}^4\text{He}({}^3\text{He}, {}^3\text{He})$ E=18-70 MeV, measured $\sigma(\theta)$. Phase shift analysis.

1978Lu05: ${}^4\text{He}(\text{pol } {}^3\text{He}, {}^3\text{He})$ E=18-32 MeV, measured $A(\theta)$, deduced phase shifts. ${}^7\text{Be}$ deduced level, J, π .

1989Os06: ${}^3\text{He}(\alpha, \alpha)$ E=56.3-95.5 MeV, measured $\sigma(\theta)$, phase shifts vs E. ${}^7\text{Be}$ deduced resonance parameters.

1992Zu03: ${}^3\text{He}(\alpha, \alpha)$ E_{C.M.}=11-41 MeV, analyzed phase shifts vs E. ${}^7\text{Be}$ deduced resonances. J, π , γ . R-matrix, S-matrix, pade approximation.

1993Mo11: ${}^4\text{He}({}^3\text{He}, {}^3\text{He})$ E=1.2-3 MeV, measured $\sigma(\theta)$.

 ${}^7\text{Be}$ Levels

| E(level) | J^π | $T_{1/2}$ | l_α | Comments |
|------------------------------|---------|-----------|------------|--|
| 4.57×10^3 | 5 | | 3 | $\theta_\alpha^2 = 0.70$ 4. |
| 6.73×10^3 | 10 | | 3 | $\theta_\alpha^2 = 1.36$ 13 and $\theta_p^2 = 0.000$ 2. |
| 7.21×10^3 | 6 | | 3 | $\theta_\alpha^2 = 0.010$ 1 and $\theta_p^2 = 0.26$ 2. |
| 9.27×10^3 | 10 | | 3 | $\theta_\alpha^2 = 0.70$ 26 and $\theta_p^2 = 0.29$ +9-18. |
| 10.0×10^3 | | 1.8 MeV | 1 | |
| $\approx 10.0 \times 10^3$ | | | | T=1/2 Γ : broad. |
| 11.00×10^3 | 5 | 0.40 MeV | 5 | 1 |
| | | | | T=3/2 $\theta_{p2}^2 = 0.13$ 2. |
| $\approx 16.7 \times 10^3$? | | 6.5 MeV | | |
| 31.1×10^3 | 10 | 8.5 MeV | 25 | from R-matrix analysis. |
| 34.1×10^3 | 15 | 10.5 MeV | 30 | from R-matrix analysis. |