# $^{53}$Cr(n,$\gamma$) E=res 1994Co09

History

| Type | Author | Citation | Literature Cutoff Date |
|---|---|---|---|
| Full Evaluation | Yang Dong, Huo Junde | NDS 121, 1 (2014) | 20-Jun-2014 |

1994Co09: neutron capture in s- and p-wave resonances, in the range 2-50 keV, tof, measured E$\gamma$ by Ge detector with an effective anti-Compton shielding.
Others: see 1986Br12, 1975Be07, 1971St07.
All data are from 1994Co09.

## $^{54}$Cr Levels

| E(level) | J$^\pi$† | E(level) | J$^\pi$† | E(level) | J$^\pi$† | E(level) | J$^\pi$† |
|---|---|---|---|---|---|---|---|
| 0.0 | $0^+$ | 3719.82 *25* | $2^+$ | 4190.8 *5* | $2^+$ | 4872.3 *4* | $2^+$ |
| 834.838 *20* | $2^+$ | 3786.6 *8* | $4^+$ | 4217.3 *4* | $(2)^+,3^+$ | 5113.5 *5* | $2^+$ |
| 1823.96 *19* | $4^+$ | 3799.3 *6* | $4^+$ | 4239.0 *5* | $2^+$ | 5188.8 *7* | $2^+$ |
| 2619.55 *11* | $2^+$ | 3860.83 *18* | $2^+$ | 4256.3 *4* | $2^+$ | 5225.8 *4* | $2^+$ |
| 2829.50 *22* | $0^+$ | 3925.18 *23* | $2^+$ | 4381.1 *4* | $2^-$ | 5268.2 *5* | $2^+$ |
| 3074.0 *3* | $2^+$ | 3927.5 *5* | $2^+$ | 4453.3 *4* | $4^+$ | 5291.2 *5* | $2^+$ |
| 3159.9 *4* | $4^+$ | 4012.94 *23* | $0^+$ | 4458.3 *5* | $1^+,(2^+)$ | 5294.8 *4* | $1^+,(2)^+$ |
| 3393.37 *21* | $2^+$ | 4083.3 *4* | $3^+$ | 4571.1 *7* | $(2^-),3^-$ | 5345.4 *8* | 2 |
| 3436.74 *18* | $2^+$ | 4126.0 *6* | | 4633.2 *3* | $2^+$ | 5585.3 *3* | $1^+,2^+$ |
| 3656.1 *6* | $4^+$ | 4127.1 *5* | $3^-$ | 4844.7 *6* | $2^-$ | (9719.80 *10*) | |

† From primary and secondary $\gamma$'s character.

## $\gamma$($^{54}$Cr)

| E$_\gamma$ | E$_i$(level) | J$_i^\pi$ | E$_f$ | J$_f^\pi$ | E$_\gamma$ | E$_i$(level) | J$_i^\pi$ | E$_f$ | J$_f^\pi$ |
|---|---|---|---|---|---|---|---|---|---|
| 834.83 *2* | 834.838 | $2^+$ | 0.0 | $0^+$ | 2558.5 *3* | 3393.37 | $2^+$ | 834.838 | $2^+$ |
| 889.9 *7* | 3719.82 | $2^+$ | 2829.50 | $0^+$ | 2601.88 *19* | 3436.74 | $2^+$ | 834.838 | $2^+$ |
| 989.11 *25* | 1823.96 | $4^+$ | 834.838 | $2^+$ | 2619.51 *19* | 2619.55 | $2^+$ | 0.0 | $0^+$ |
| 1052.0 *7* | 4126.0 | | 3074.0 | $2^+$ | 2629.6 *9* | 4453.3 | $4^+$ | 1823.96 | $4^+$ |
| 1095.7 *5* | 3925.18 | $2^+$ | 2829.50 | $0^+$ | 2675.1 *5* | 5294.8 | $1^+,(2)^+$ | 2619.55 | $2^+$ |
| 1100.5 *8* | 3719.82 | $2^+$ | 2619.55 | $2^+$ | 2746.8 *9* | 4571.1 | $(2^-),3^-$ | 1823.96 | $4^+$ |
| 1241.3 *4* | 3860.83 | $2^+$ | 2619.55 | $2^+$ | 2965.0 *8* | 3799.3 | $4^+$ | 834.838 | $2^+$ |
| 1335.7 *9* | 3159.9 | $4^+$ | 1823.96 | $4^+$ | 2965.2 *3* | 5585.3 | $1^+,2^+$ | 2619.55 | $2^+$ |
| 1394.3 *7* | 4012.94 | $0^+$ | 2619.55 | $2^+$ | 3025.9 *2* | 3860.83 | $2^+$ | 834.838 | $2^+$ |
| 1463.9 *6* | 4083.3 | $3^+$ | 2619.55 | $2^+$ | 3090.6 *4* | 3925.18 | $2^+$ | 834.838 | $2^+$ |
| 1507.7 *7* | 4127.1 | $3^-$ | 2619.55 | $2^+$ | 3177.90 *25* | 4012.94 | $0^+$ | 834.838 | $2^+$ |
| 1597.9 *8* | 4217.3 | $(2)^+,3^+$ | 2619.55 | $2^+$ | 3291.8 *8* | 4127.1 | $3^-$ | 834.838 | $2^+$ |
| 1619.8 *9* | 4239.0 | $2^+$ | 2619.55 | $2^+$ | 3356.1 *5* | 4190.8 | $2^+$ | 834.838 | $2^+$ |
| 1712.4 *3* | 4872.3 | $2^+$ | 3159.9 | $4^+$ | 3382.2 *6* | 4217.3 | $(2)^+,3^+$ | 834.838 | $2^+$ |
| 1784.61 *17* | 2619.55 | $2^+$ | 834.838 | $2^+$ | 3393.2 *3* | 3393.37 | $2^+$ | 0.0 | $0^+$ |
| 1803.9 *5* | 4633.2 | $2^+$ | 2829.50 | $0^+$ | 3403.9 *6* | 4239.0 | $2^+$ | 834.838 | $2^+$ |
| 1832.1 *5* | 3656.1 | $4^+$ | 1823.96 | $4^+$ | 3421.4 *4* | 4256.3 | $2^+$ | 834.838 | $2^+$ |
| 1963.3 *9* | 3786.6 | $4^+$ | 1823.96 | $4^+$ | 3546.0 *6* | 4381.1 | $2^-$ | 834.838 | $2^+$ |
| 1975.0 *10* | 3799.3 | $4^+$ | 1823.96 | $4^+$ | 3719.7 *3* | 3719.82 | $2^+$ | 0.0 | $0^+$ |
| 1994.5 *3* | 2829.50 | $0^+$ | 834.838 | $2^+$ | 3927.5 *5* | 3927.5 | $2^+$ | 0.0 | $0^+$ |
| 2013.5 *4* | 4633.2 | $2^+$ | 2619.55 | $2^+$ | 4009.7 *9* | 4844.7 | $2^-$ | 834.838 | $2^+$ |
| 2101.1 *3* | 3925.18 | $2^+$ | 1823.96 | $4^+$ | 4133.1 *6* | (9719.80) | | 5585.3 | $1^+,2^+$ |
| 2239.0 *3* | 3074.0 | $2^+$ | 834.838 | $2^+$ | 4189.8 *9* | 4190.8 | $2^+$ | 0.0 | $0^+$ |
| 2259.3 *4* | 4083.3 | $3^+$ | 1823.96 | $4^+$ | 4256.2 *9* | 4256.3 | $2^+$ | 0.0 | $0^+$ |
| 2325.2 *6* | 3159.9 | $4^+$ | 834.838 | $2^+$ | 4278.3 *6* | 5113.5 | $2^+$ | 834.838 | $2^+$ |
| 2358.2 *10* | 5188.8 | $2^+$ | 2829.50 | $0^+$ | 4374.4 *10* | (9719.80) | | 5345.4 | 2 |
| 2393.4 *6* | 4217.3 | $(2)^+,3^+$ | 1823.96 | $4^+$ | 4390.7 *4* | 5225.8 | $2^+$ | 834.838 | $2^+$ |

Continued on next page (footnotes at end of table)

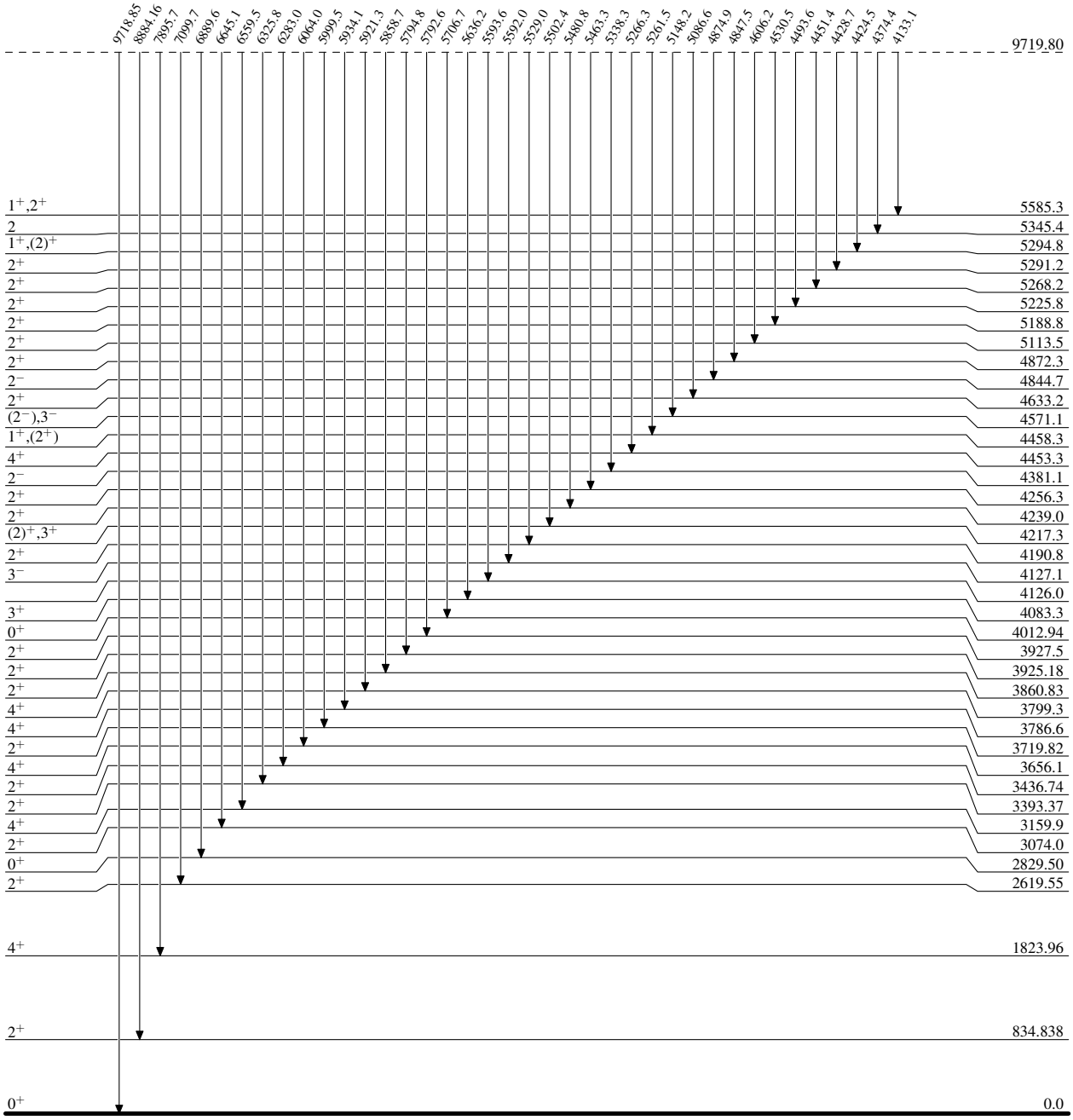
## $^{53}$Cr(n,$\gamma$) E=res 1994Co09 (continued)

### $\gamma(^{54}Cr)$ (continued)

| $E_\gamma$ | $E_i$(level) | $J_i^\pi$ | $E_f$ | $J_f^\pi$ | $E_\gamma$ | $E_i$(level) | $J_i^\pi$ | $E_f$ | $J_f^\pi$ |
|---|---|---|---|---|---|---|---|---|---|
| 4424.5 *7* | (9719.80) | | 5294.8 | $1^+,(2)^+$ | 5463.3 *6* | (9719.80) | | 4256.3 | $2^+$ |
| 4428.7 *7* | (9719.80) | | 5291.2 | $2^+$ | 5480.8 *10* | (9719.80) | | 4239.0 | $2^+$ |
| 4433.1 *7* | 5268.2 | $2^+$ | 834.838 | $2^+$ | 5502.4 *11* | (9719.80) | | 4217.3 | $(2)^+,3^+$ |
| 4451.4 *7* | (9719.80) | | 5268.2 | $2^+$ | 5529.0 *12* | (9719.80) | | 4190.8 | $2^+$ |
| 4455.9 *9* | 5291.2 | $2^+$ | 834.838 | $2^+$ | 5592.0 *10* | (9719.80) | | 4127.1 | $3^-$ |
| 4458.2 *5* | 4458.3 | $1^+,(2^+)$ | 0.0 | $0^+$ | 5593.6 *9* | (9719.80) | | 4126.0 | |
| 4459.4 *10* | 5294.8 | $1^+,(2)^+$ | 834.838 | $2^+$ | 5636.2 *8* | (9719.80) | | 4083.3 | $3^+$ |
| 4493.6 *6* | (9719.80) | | 5225.8 | $2^+$ | 5706.7 *7* | (9719.80) | | 4012.94 | $0^+$ |
| 4510.6 *12* | 5345.4 | 2 | 834.838 | $2^+$ | 5792.6 *12* | (9719.80) | | 3927.5 | $2^+$ |
| 4530.5 *9* | (9719.80) | | 5188.8 | $2^+$ | 5794.8 *6* | (9719.80) | | 3925.18 | $2^+$ |
| 4606.2 *9* | (9719.80) | | 5113.5 | $2^+$ | 5858.7 *6* | (9719.80) | | 3860.83 | $2^+$ |
| 4751.3 *9* | 5585.3 | $1^+,2^+$ | 834.838 | $2^+$ | 5921.3 *13* | (9719.80) | | 3799.3 | $4^+$ |
| 4847.5 *6* | (9719.80) | | 4872.3 | $2^+$ | 5934.1 *12* | (9719.80) | | 3786.6 | $4^+$ |
| 4872.2 *5* | 4872.3 | $2^+$ | 0.0 | $0^+$ | 5999.5 *6* | (9719.80) | | 3719.82 | $2^+$ |
| 4874.9 *8* | (9719.80) | | 4844.7 | $2^-$ | 6064.0 *23* | (9719.80) | | 3656.1 | $4^+$ |
| 5086.6 *7* | (9719.80) | | 4633.2 | $2^+$ | 6283.0 *5* | (9719.80) | | 3436.74 | $2^+$ |
| 5113.9 *9* | 5113.5 | $2^+$ | 0.0 | $0^+$ | 6325.8 *8* | (9719.80) | | 3393.37 | $2^+$ |
| 5148.2 *9* | (9719.80) | | 4571.1 | $(2^-),3^-$ | 6559.5 *18* | (9719.80) | | 3159.9 | $4^+$ |
| 5189.6 *14* | 5188.8 | $2^+$ | 0.0 | $0^+$ | 6645.1 *5* | (9719.80) | | 3074.0 | $2^+$ |
| 5261.5 *9* | (9719.80) | | 4458.3 | $1^+,(2^+)$ | 6889.6 *6* | (9719.80) | | 2829.50 | $0^+$ |
| 5266.3 *4* | (9719.80) | | 4453.3 | $4^+$ | 7099.7 *5* | (9719.80) | | 2619.55 | $2^+$ |
| 5268.3 *11* | 5268.2 | $2^+$ | 0.0 | $0^+$ | 7895.7 *15* | (9719.80) | | 1823.96 | $4^+$ |
| 5291.3 *7* | 5291.2 | $2^+$ | 0.0 | $0^+$ | 8884.16 *19* | (9719.80) | | 834.838 | $2^+$ |
| 5338.3 *4* | (9719.80) | | 4381.1 | $2^-$ | 9718.85 *19* | (9719.80) | | 0.0 | $0^+$ |

## $^{53}$Cr(n,γ) E=res 1994Co09

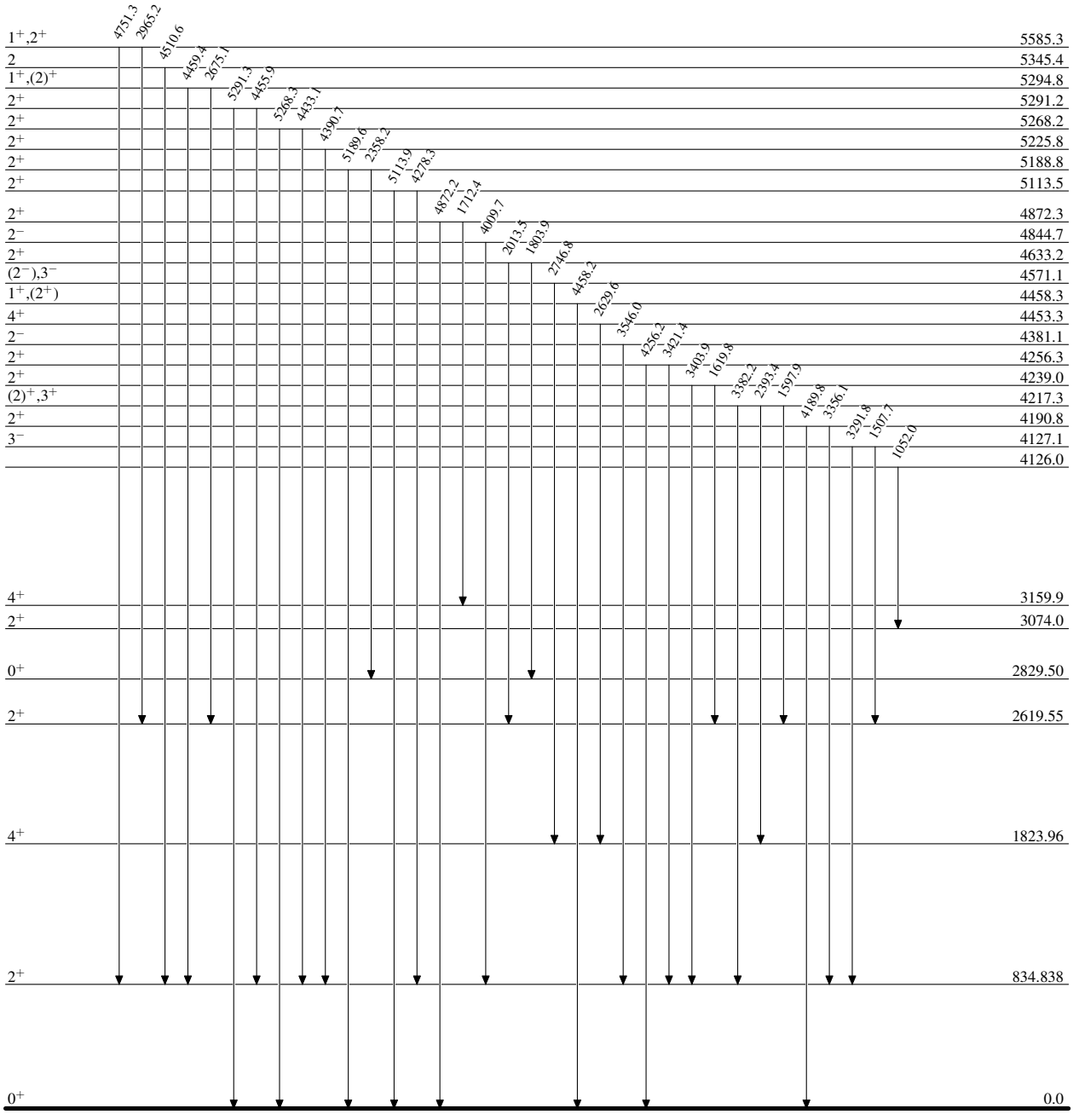
Level Scheme




$^{54}_{24}Cr_{30}$

## $^{53}$Cr(n,γ) E=res 1994Co09

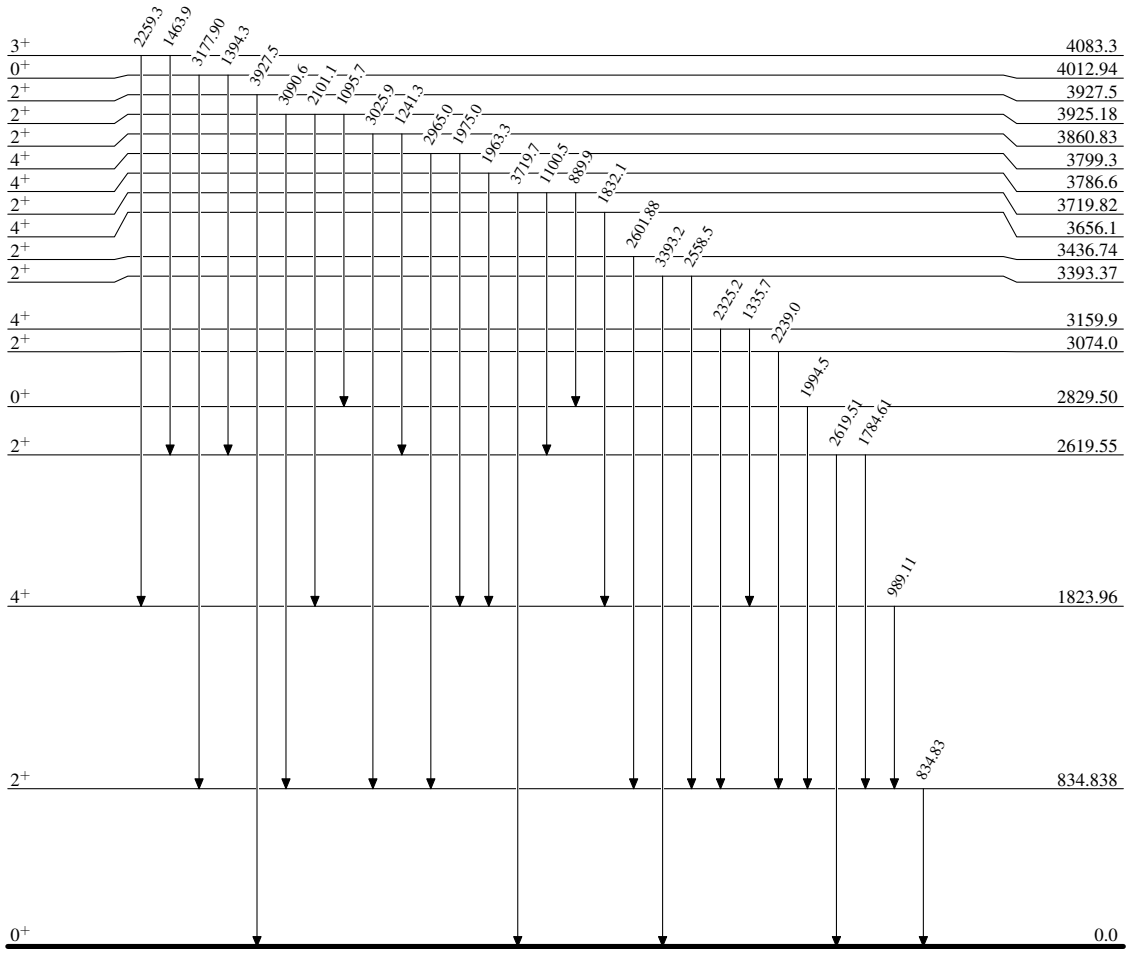
Level Scheme (continued)




$^{54}_{24}Cr_{30}$

**$^{53}$Cr(n,γ) E=res 1994Co09**

Level Scheme (continued)




$^{54}_{24}Cr_{30}$