原子核物理评论 2009 26 (Suppl): 70-74 ISSN: 1007-4627 CN: 62-1131/O4

Proceedings of the 3rd China-Japan-Korea Hardron and Nuclear Physics 2008 Symposium

Confirmation / Observation of Hindered E2 Strengths in 16,18C

H.J.Ong[1], N.Imai[2], D.Suzuki[3], H.Iwasaki[3], H.Sakurai[3, 4], T.Onishi[3],

M.Suzuki[3], S.Ota[5], S.Takeuchi[4], T.Nakao[3], Y.Togano[6],

Y.Kondo[4, 7], N.Aoi[4], H.Baba[4], B.Shawn[4], Y.Ichikawa[3],

M.Ishihara[4], T.Kubo[4], K.Kurita[6], T.Motobayashi[4],

T.Nakamura[7], T.Okumura[7], Y.Yanagisawa[4]

(1 RCNP, Osaka University, 10 1 Mihogaoka, Ibaraki, 567 0047 Osaka, Japan;

2 KEK, Oho 1 1, Tsukuba, Ibaraki 305 0801, Japan;

3 Department of Physics, University of Tokyo, Hongo 7 3 1, Bunkyo, Tokyo 113 0033, Japan;

4 RIKEN Nishina Center, RIKEN, Hirosawa 2 1, Wako, Saitama 351 0198, Japan;

5 CNS, University of Tokyo, RIKEN Campus, Hirosawa 2 1, Wako, Saitama 351 0198, Japan;

6 Department of Physics, Rikkyo University, Nishi Ikebukuro 3 34 1, Toshima, Tokyo 171 8501, Japan;

7 Department of Physics, Tokyo Institute of Technology, Ookayama 2 12 1, Meguro, Tokyo 152 8551, Japan)

收稿日期 修回日期 网络版发布日期 接受日期

摘要 The lifetime of the first excited 2+ state in 18C was measured using an upgraded recoil shadow method to determine the electric quadrupole transition. The measured mean lifetime is 18.9 ±0.9(stat)±4.4(syst)ps, which corresponds to a B(E2; 2+1→0+gs) value of (4.3± 0.2 ±1.0) e2fm4, or about 1.5 Weisskopf units. The mean lifetime of the first 2+ state in 16C was remeasured to be about 18 ps, about four times shorter than the value reported previously. This discrepancy was explained by incorporating the γ ray angular distribution measured in this work into the previous measurement. The observed transition strengths in 16,18C are hindered compared to the empirical transition strengths, indicating that the anomalous hindrance observed in 16C persists in 18C.

关键词 neutron rich nuclei lifetime measurement B(E2)

分类号

DOI:

通讯作者:
H. J. Ong onghjin@rcnp.osaka-u.ac.jp
作者个人主页:

H.J.Ong[1]; N.Imai[2]; D.Suzuki[3]; H.Iwasaki[3]; H.Sakurai[3; 4]; T.Onishi[3];

M.Suzuki[3]; S.Ota[5]; S.Takeuchi[4]; T.Nakao[3]; Y.Togano[6];

Y.Kondo[4; 7]; N.Aoi[4]; H.Baba[4]; B.Shawn[4]; Y.Ichikawa[3];

M.Ishihara[4]; T.Kubo[4]; K.Kurita[6]; T.Motobayashi[4];

T.Nakamura[7]; T.Okumura[7]; Y.Yanagisawa[4]