

# Investigation of the Coulomb dissociation of $^{15}\text{C}$ at SAMURAI

D. Hegedus,<sup>1</sup> Y. Kondo,<sup>2</sup> T. Nakamura,<sup>2</sup> A. Horvath,<sup>1</sup> R. Tanaka,<sup>2</sup> T. Aumann,<sup>3</sup> F. Delaunay,<sup>4</sup> N. Fukuda,<sup>2</sup> J. Gibelin,<sup>4</sup> J. Hwang,<sup>5</sup> N. Inabe,<sup>2</sup> T. Isobe,<sup>2</sup> S. Kim,<sup>5</sup> N. Kobayashi,<sup>2</sup> T. Kobayashi,<sup>6</sup> T. Kubo,<sup>2</sup> K. Kusaka,<sup>2</sup> F. M. Marques,<sup>4</sup> Y. Matsuda,<sup>7</sup> R. Minakata,<sup>7</sup> T. Motobayashi,<sup>2</sup> T. Murakami,<sup>7</sup> S. Nishi,<sup>2</sup> S. Ogoshi,<sup>2</sup> J. Onishi,<sup>2</sup> N. A. Orr,<sup>4</sup> H. Otsu,<sup>2</sup> T. Sako,<sup>2</sup> H. Sato,<sup>2</sup> Y. Sato,<sup>5</sup> K. Sekiguchi,<sup>6</sup> Y. Shimizu,<sup>2</sup> H. Suzuki,<sup>2</sup> K. Takahashi,<sup>6</sup> H. Takeda,<sup>2</sup> S. Takeuchi,<sup>2</sup> T. Teranishi,<sup>8</sup> Y. Togano,<sup>9</sup> and K. Yoneda<sup>2</sup>

<sup>1</sup>*Eotvos Lorand University, Budapest*

<sup>2</sup>*Tokyo Institute of Technology, RIKEN Nishina Center*

<sup>3</sup>*TU, Darmstadt*

<sup>4</sup>*LPC-ENSICAEN*

<sup>5</sup>*Seoul National University*

<sup>6</sup>*Tohoku University*

<sup>7</sup>*Kyoto University*

<sup>8</sup>*Kyushu University*

<sup>9</sup>*EMMI, GSI*

We investigated the  $^{15}\text{C}(\gamma, n)^{14}\text{C}$  breakup reaction at 240 MeV/nucleon bombarding energy at RIKEN using the SAMURAI spectrometer and detection setup. Our aim is to examine the kinetic properties of the Coulomb dissociation of the  $^{15}\text{C}$ . In the analysis we are using several method to make conclusion for the inverse reaction of the electromagnetic part of the breakup that is the neutron capture of the  $^{14}\text{C}$  which has astrophysical importance. Our particular interest is to gain insight into the details of the breakup reaction with the measurement of the impact parameter dependence of the process. It is available since the very good angular resolution of the beam tracking drift chambers used in the setup. We present the experimental results of the excitation energy spectrum for different impact parameter intervals between 12 fm, 18 fm, 28 fm and 80 fm.