

RIBF ULIC Symposium/mini-WS Report

* English only

Date: 5 August 2024

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Title	[RIBF-ULIC mini WS] Structure of neutron-rich matter revealed by beta decay		
Date	29–30 July 2024		
Place	Nishina Hall		
Language	[<input checked="" type="checkbox"/>] English [<input type="checkbox"/>] Japanese		
HP address	https://indico2.riken.jp/e/MiniWS_beta		
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Financial support from ULIC (Users Office Use Only)	Total :	JPY
	[Breakdown]	
Co-hosting / any financial support from other organization(s)		

Summary of discussions and its (expected) results:

The latest results of theoretical calculations and experiments were presented. The nuclear beta decay together with the delayed neutron emission probability play a central role in understanding the r-process nucleosynthesis. Theoretically, the statistical model is usually employed to describe the neutron(s) emission, although the mechanism of the compound-nucleus formation is not still well understood. To obtain some insight, a possible study of the gamma emission followed by the charge-exchange reaction for stable nuclei was discussed. Furthermore, the precise determination of the energy of emitted neutrons provides us with the beta-strength distribution, and this can be used as a test of the theoretical model. A detailed study of the forbidden transitions in heavy nuclei particularly beyond the N=126 magic number is also needed to understand the r-process.

The beta decay and the neutron emission are a spectroscopic tool to investigate the structure of neutron-rich nuclei. New data were presented, and the evolution of the shell structure and nuclear shapes was discussed. The shape transition and shape coexistence were suggested, which stimulates further theoretical calculations.

We concluded that it would be nice to continue to have this kind of informal meeting, where we can exchange some preliminary results and unmaturred ideas among theorists and experimentalists.

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