

1	Title of research		Study of α condensation in ^{20}Ne within the THSR wave function
2	List of Participants (Name and affiliation)		Bo Zhou (contact), Hokkaido Univ., (moved to Fudan University)
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3	Period of research		2019.9~2021.3
4	Main location of collaboration implementation		RCNP, Hokudai, Fudan University
5	Publication list (Please include DOI if available)	Articles	
		Talks	B.Zhou, Alpha-particle condensation in ^{20}Ne , JPS Antum meeting, September, 2020.
			B. Zhou, Container Picture for Cluster Structure in Nuclei, Yamada Conference LXXII: The 8th Asia-Pacific conference on Few-Body problems in Physics (APFB2020), March, 2021.
Theses			
6	Description of the results and outputs		<p>Quite recently, a new experiment performed by one group of Osaka University shows some clues for the α condensation state in ^{20}Ne. The THSR wave function is particularly designed for describing the α condensation state and it is considered as one suitable tool for searching for the α condensation state in ^{20}Ne at present. By using the one-beta and two-beta spherical size parameters THSR wave function, we performed the GCM calculations for 5α structure. It is found some 0^+ state above the threshold is the possible candidate of five alpha condensate, which is confirmed further from the calculations of reduced width amplitude. In particular, we found there is a very large amplitude between the 4α condensate state and one 0^+ excited state of ^{20}Ne. The results will be submitted soon.</p>