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Alpha gas state in 36Ar[1] HIDETOSHI AKIMUNE, Department of Physics, Konan University, JULIEN GIBELIN, Department of Physics, Caen University, MUHSIN HARAKEH, KVI, MASATOSHI ITOH, CYRIC, Tohoku University, TAKAHIRO KAWABATA, Department of Physics, Kyoto University, ATSUSHI TAMII, MAMORU FUJIWARA, KENJIRO MIKI, CHIRO IWAMOTO, RCNP, Osaka University, HIDEAKI OTSU, RIKEN, SHINSUKE OHA, CNS, Tokyo University, ISAO TANIHATA, RCNP, Osaka University, TOMOYUKI MURAMOTO, CHIKA KADONO, Department of Physics, Konan University, NASSER KALANTAR, KVI, SHUN ANDO, CYRIC, Tohoku University, SYLVIAN LEBLOND, Department of Physics, Caen University, YASSID AYYAD, RCNP, Osaka University, TATSUYA FURUNO, MIHO TSYNYRA, TASUO BABA, SATOSHI ADACHI, Department of Physics, Kyoto University, MARTIN FREER, University of Birmingham — The α cluster structures in light nuclei with N=Z are expected to appear abov the threshold energy of breakup into α particles. After the proposal of an α cluster wave function with α particle condensate type, such condensate states are both theoretically and experimentally discussed extensively. Theoretically, the existence of dilute α cluster state in nuclei with mass region of A>16, experimentally, is not confirmed for N-α cluster states in nuclei heavier than A=16. Recently, we measured α inelastic scattering of ^{36}Ar followed by α decay in an inverse kinematics setup. A 50 MeV/u ^{36}Ar beam from RCNP ring cyclotron was used to bombard a ^{4}He gas target. α particles were detected in the magnetic spectrometer LAS which was set at 0 degrees. α

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