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Probing fusion barrier distributions with large-angle quasielastic scattering of ^{48}Ti , ^{56}Fe and ^{64}Ni on ^{208}Pb SHINICHI MITSUOKA, HIROSHI IKEZOE, KATSUHISA NISHIO, KAORU TSURUTA, Japan Atomic Energy Research Institute, SUN-CHAN JEONG, YUTAKA WATANABE, High Energy Accelerator Research Organization — As a new procedure to extract representations of fusion barrier distributions, it has been proposed to take the first derivative of the ratio of the quasielastic cross section to the Rutherford cross section with respect to the center-of-mass energy. We measured the excitation functions of quasielastic scattering at large-backward angles of 162° , 168° and 172° from ^{208}Pb target bombarded with heavy-ion beams of ^{48}Ti , ^{56}Fe and ^{64}Ni from the JAERI Tandem-booster accelerator at energies near the Coulomb barrier. The result for quasielastic barrier distributions will be discussed by comparing with couple-channel calculations and data of fusion barrier distribution in the ^{208}Pb based cold fusion reactions for superheavy element synthesis.

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