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Strength of the Σ mean field deduced from SCDW model analyses of (π^-, K^+) inclusive spectra on ^{12}C , ^{28}Si , ^{58}Ni and ^{209}Bi ¹ M. KOHNO, Kyushu Dental College, Y. FUJIWARA, Kyoto Univ., Y. WATANABE, K. OGATA, M. KAWAI, Kyushu Univ — The semiclassical distorted wave model is developed to analyze (π^-, K^+) Σ formation inclusive spectra on various nuclear targets. We do not introduce a factorization approximation in terms of Fermi averaging of the elementary cross sections in nuclear medium. Confirming first that the model works well for the (π^+, K^+) Λ formation inclusive spectra, we apply it to the Σ case. The shape and magnitude of the experimental spectra for various target nuclei taken at KEK [P.K. Saha *et al.*, Phys. Rev. C70, 044613 (2004)] are satisfactorily reproduced using a repulsive Σ -nucleus single-particle potential whose strength is of the order of 30~50 MeV. The isovector part of the Σ single-particle potential is also determined from the data of heavier nuclei.

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M. Kohno
Kyushu Dental College

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