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**Quenching of Spectroscopic Factors: Short- and long-range correlations effects in a phenomenological model.**[1] STEFANOS PASCHALIS, MARINA PETRI, University of York, AUGUSTO MACCHIAVELLI, Lawrence Berkeley National Laboratory — The independent-particle model of the nucleus has provided a solid framework to explain many nuclear properties. Residual interactions between nucleons, both short- and long-range, modify the mean-field approximation and the pure independent-particle picture in the form of quasi-particles. Notably, these correlations are thought to be the reason for the quenching of spectroscopic factors observed in (e,ep), (p,2p) and transfer reactions [1]. Inspired by the results of Ref. [2], we proposed a phenomenological model to examine the role of short- and long-range correlations and their evolution in asymmetric systems [3]. Our approach correlates the observed [2] increase of the high-momentum component of the proton momentum density in a neutron-rich nucleus with the reduced proton occupancies for states below or near the Fermi level as a function of (N-Z)/A. In this contribution we extend the model to capture effects of weak binding that may play a role in reactions with exotic beams. Furthermore, we discuss the implications of our SRC results on the symmetry energy and potential changes in charge radii. [1] W. Dickhoff and C. Barbieri, PPNP 52 (2004) 377 [2] M. Duer et al., Nature, 560 (2018) 617 [3] S. Paschalis, et al. arXiv:1812.08051v2 [nucl-ex]

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