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**Medium modifications of nucleon structure functions** WOLFGANG BENTZ, Dept. of Physics, School of Science, Tokai University, Japan, IAN CLOET, ANTHONY THOMAS, Thomas Jefferson National Laboratories (JLab), U.S.A. — Using a chiral effective quark-diquark model for the single nucleon, we calculate the equation of state of nuclear matter in the mean field approximation, and the properties of a bound nucleon. In particular, we focus on the spin-independent and spin-dependent structure functions. For both cases, we first describe the free nucleon structure functions, and then consider the medium modifications. For the spin-independent case, we show the important role played by the mean vector field in the medium to explain the EMC effect. Concerning the spin-dependent case, we give predictions for the polarized EMC effect in the nuclear matter picture as well as for finite nuclei.

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