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Isospin mixing in the nucleon and ^4He and the nucleon strange electric form factor MICHELE VIVIANI, INFN, Sezione di Pisa (Italy), ROCCO SCHIAVILLA, ODU & Jefferson Lab. — In order to isolate the contribution of the nucleon strange electric form factor to the parity-violating asymmetry measured in $^4\text{He}(\vec{e}, e')^4\text{He}$ experiments, it is crucial to have a reliable estimate of the magnitude of isospin-symmetry-breaking (ISB) corrections in both the nucleon and ^4He . Isospin admixtures in the nucleon are studied by B. Kubis and R. Lewis in Ref. Phys. Rev. C **74**, 015204 (2006) in chiral perturbation theory. We examine in the present contribution the issue of isospin admixtures in ^4He derived from ISB components in the nuclear and electromagnetic interactions. A careful analysis of the model dependence in the resulting predictions for the nucleon and nuclear ISB contributions to the asymmetry is carried out. We conclude that, at the low momentum transfers of interest in recent measurements reported by the HAPPEX collaboration at Jefferson Lab, these contributions are of comparable magnitude to those associated with strangeness components in the nucleon electric form factor.

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