Nuclear electromagnetic currents from chiral EFT[1] STEFAN KÖLLING, Forschungszentrum Juelich/ Ohio University, EVGENY EPELBAUM, HERMANN KREBS, Ruhr-Universitaet Bochum, ULF-G. MEIßNER, HISKP Universitaet Bonn, IKP-3 Forschungszentrum Juelich, IAS-4 Forschungszentrum Juelich — Using the method of unitary transformation in combination with chiral effective field theory we derive the pion exchange contributions to the two-nucleon electromagnetic current. A formal definition of the current operator in this scheme and the power counting is presented. We discuss the implications of additional unitary transformations that have to be present to ensure the renormalizability of the one-pion exchange current. Further, we give explicit and compact results for the current in coordinate-space.

Stefan Kölling
Forschungszentrum Juelich/ Ohio University