Abstract Submitted
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Beyond linear polarization in gyrokinetic theory[1] ALAIN BRIZARD, Saint Michaels College — The concept of linear gyrocenter polarization in gyrokinetic theory is generalized to include contributions from guiding-center polarization as well as nonlinear (quadratic) gyrocenter polarization. The former polarization is obtained from Hamiltonian guiding-center theory in which higher-order corrections due to magnetic-field nonuniformity are retained [1]. The latter polarization can be derived either variationally from the cubic gyrocenter Hamiltonian [2] or directly by push-forward construction [3].

[1] A.J. Brizard and N. Tronko, submitted for publication (2012).
[2] A. Mishchenko and A.J. Brizard, Phys. Plasmas <u>18</u>, 022305 (2011).
[3] A.J. Brizard, Comm. Nonlin. Sci. Num. Sim. <u>13</u>, 24 (2008).

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