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Gyrokinetic framework for Neoclassical Tearing Modes NATALIA TRONKO, HOWARD WILSON, York Plasma Institute, ALAIN BRIZARD, St Michel's College, Vermont — We are developing a new theoretical framework based on the Hamiltonian Gyrokinetics [1] for description of the Neoclassical Tearing Modes dynamics. The main advantage of this approach is the possibility of systematically including effects of magnetic geometry as well as magnetic field fluctuations due to the presence of a magnetic island. Moreover it makes it possible to systematically compute the expression for the polarization current as well as including FLR effects. This work represents an extension of previous drift-kinetic models for NTMs [2].

[1] A.J. Brizard and T.S. Hahm, Rev.of Mod.Physics 79, 2007.
[2] H.Wilson, J. W. Connor et al., Phys. Plasmas 3, 248 (1996).

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