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**Maria P Gualdani\*** ([gualdani@math.utexas.edu](mailto:gualdani@math.utexas.edu)), 1 University Station C1200, Austin, TX 78712. *A factorization method for non-symmetric linear operator: enlargement of the functional space while preserving hypo-coercivity.*

We present a factorization method for non-symmetric linear operators: the method allows to enlarge functional spaces while preserving spectral properties for the considered operators. In particular, spectral gap and related convergence towards equilibrium follow easily by hypo-coercivity and resolvent estimates. Applications of this theory on several kinetic equations will be presented. This is a joint work with Stephane Mischler and Clement Mouhot. (Received November 29, 2011)