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Developments in the Theory of Toriodal Momentum Transport¹ P.H. DIAMOND, C. MCDEVITT, O.D. GURCAN, University of California, San Diego, La Jolla, CA 92093-0424 USA, T.S. HAHM, Princeton Plasma Physics Laboratory, Princeton, NJ 08543-0451 USA — In this talk, we will review and discuss recent developments in the theory of toroidal momentum transport and intrinsic rotation. Special emphasis will be placed on physics mechanisms which underlie the non-diffusive momentum flux, in both its pinch and residual stress components. Electric field shear, toroidicity and wave momentum exchange effects are analyzed. The outlook for future investigations involving energetic particle driven Alfven waves and their effect on momentum transport will be discussed. We also discuss a new class of momentum transport bifurcations.

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