Wave Momentum, Radial Current and Intrinsic Rotation[1] P.H. DIAMOND, University of California, San Diego, O.D. GURCAN, Laboratoire de Physique et Technologie des Plasmas — In this paper, we extend ongoing work on the origins of intrinsic rotation in tokamaks to address general novel mechanisms for producing a non-diffusive Reynolds stress which drives intrinsic rotation. A unifying approach employs the calculation of momentum fluxes via consideration of transport of resonant particle and wave momentum. The latter is calculated via wave kinetics. Specific results include the calculations of radial current $\langle T_r \rangle$ and the associated toroidal acceleration due to wave turbulence and a more general calculation of parallel spin-up due to $k_\parallel$-symmetry breaking. The latter is shown to occur for any intensity gradient.

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