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Viscous-work effects related to pressure anisotropy increase in turbulent solar wind

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We discuss effects of viscous work related to pressure anisotropy increase in collisionless plasmas in the context of turbulent solar wind dynamics. It is shown that development of pressure anisotropy leads to direct transfer of the kinetic energy of bulk flow fluctuations to the thermal energy of plasma. The presented mechanism does not require cascading the energy to kinetic scales, thus it can be expected to operate in the inertial range of turbulence. Differences in response of collisionless and collisional plasmas to velocity perturbations are discussed based on fluid and kinetic simulation results. The simulation results and the theoretical findings are contrasted with spacecraft measurements.