

# **Mechanisms of regulation of pressure anisotropy in turbulent plasmas – the role of inertial range dynamics**

**Marek Strumik and Alexander Schekochihin**

Rudolf Peierls Centre for Theoretical Physics, University of Oxford  
1 Keble Road, Oxford OX1 3NP, UK

We investigate mechanisms of driving the pressure anisotropy and anisotropy constraining processes in turbulent space plasmas. The work is focused on the question of pressure anisotropy pattern that is formed during evolution of freely decaying turbulence stirred by moderate-amplitude fluctuations at large-scales. We investigate possible mechanisms of the pressure anisotropy regulation in the inertial range of MHD turbulence. The results of numerical simulations are discussed in terms of predictions of a theory based on double-adiabatic gyrotropic approximation for the pressure tensor. The theoretical results are validated against WIND spacecraft measurements.