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Anisotropic turbulence of pseudo Alfvèn waves NATALIA TRONKO, CFSA, University of Warwick, UK, SÉBASTIEN GALTIER, IAS, Université Paris XI, France, SERGEY NAZARENKO, Maths Department, University of Warwick — In this work we are considering the weak turbulent regime of two dimensional MHD system by applying the wave-kinetic formalism developed in the works [1,2]. Due to the geometry constraints in the two dimensional case only the Pseudo Alfvèn Waves(PAW) can exist. We find that the turbulent behavior of the MHD system into the two dimensional case is crucially different from its behavior in three dimensional one previously considered in [3]. We show that there is no Kolmogorov-like solutions, no energy cascade and therefore no turbulence universality. We also show that the triad interactions of the PAW are not empty and lead to the derivation of the wave-kinetic equation for the energy spectrum. The important property of this equation is its simplicity and therefore the possibility to treat it analytically. In particular we consider two cases: with uniform friction and viscous friction. In the first case the analysis can fully be done analytically, at the second one we proceed with qualitative and numerical tools. The main results of this work are summarized in [4].

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