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Weak turbulence of short equatorial waves

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We derive a normal form of nonlinear equations for short equatorial waves considered in the framework of the rotating shallow water model. We show dynamical splitting of equatorial Rossby and inertia - gravity waves. We derive an effective Hamiltonian for the short inertia-gravity waves and consider their kinetics using the weak turbulence approach. Stationary power- law energy spectra are obtained. They have different slopes for eastward and westward propagating waves due to the fact that resonant triads of inertia- gravity waves exist only in specific regions of the phase- space.