We analyze the long time behavior of solutions of the Boltzmann equation in the vicinity of global Maxwellian initial data, and show the existence of a scattering regime that leads to the construction of eternal solutions that do not coincide with a global Maxwellian. This long time behavior is a consequence of decay conditions in space, showing that dispersion takes over the collisional dissipative effect by increasing the rarefaction effect. This is work in collaboration with C. Bardos, F. Golse and C.D. Levermore).