

I will discuss how entanglement is propagated in (laticized) free Lifshitz scalar theories after a sudden mass quench. This phenomena is highly related to the causal structure of the theory. Although in the continuum limit of these theories the group velocity of quasi-particles is not bounded from above, I will show that the theory shows an effective causal structure. In the lattice version, the existence of causal structure is evident due to the existence of maximum group velocity. I will discuss the effect of fast, 'tortoise' and more specifically zero modes during this relaxation process and try to describe the physics with the recently introduced 'generalized quasi-particle picture'.