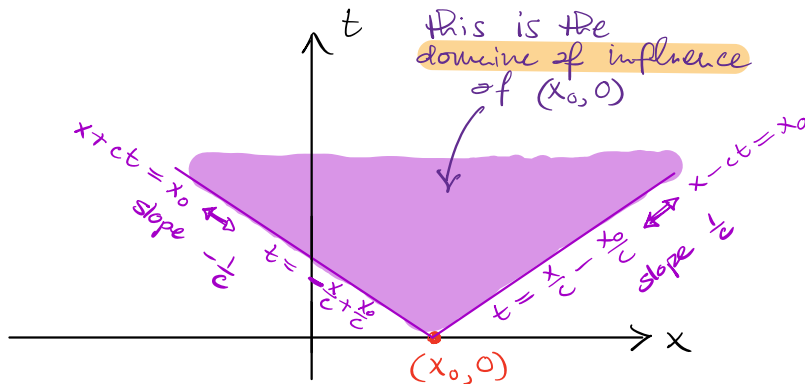
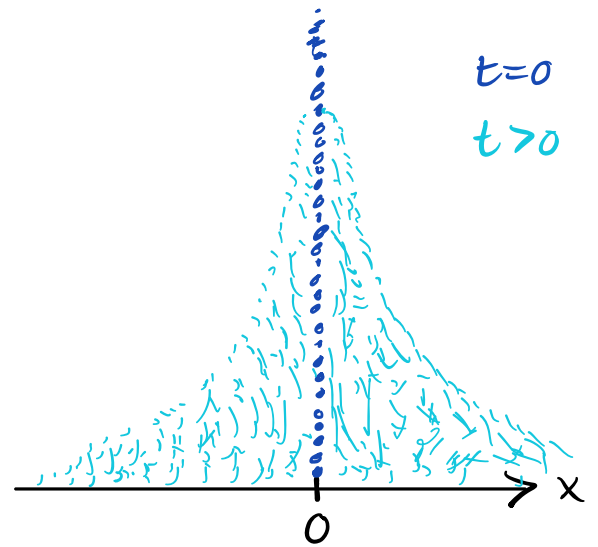


## 2.5 Comparison of Waves and Diffusions

### WAVES



### DIFFUSIONS



① Signal travels at speed  $\leq c$

Signal spreads at infinite speed

② Singularities propagate

Singularities immediately disappear

③ Energy conserved

Energy decays

④ No maximum principle

Maximum principle

There are other important differences, mainly that the wave equation is time reversible and the diffusion equation isn't, but we are focusing on that in this semester. You can read about this in the book.