Prep guide – The Lienard-Wiechert potentials
Big picture goal – To solve all the things.
1) How do we represent the charge density of a single, possibly-moving point charge?
2) When, if ever, do the Lienard-Wiechert potentials diverge?
3) Make sure you can articulate why it's sufficient to describe what point charges do if we're looking for complete solutions to everything.