**Why need Landauer Formula?**

So one is that we don’t have to disorder average (although I guess we don’t *have* to with the Kubo formula) and so can calculate the conductivity/conductance for a given distribution of impurities. And we can get the length dependence of σ (or g), while Kubo formula technically requires us to take the thermodynamic limit (L → ∞) because of quantum recurrence convergence factor thing in linear response theory? Also a Landauer formula enables us to calculate the conductance directly, especially in the insulating regime, which is often cited to be a problem with the Kubo formula, though with all the work-arounds, I’m not sure why. Another reason is that it enables us to directly calculate the probability distribution of the conductance, which assumes greater importance given the magnitude of the fluctuations, especially in the insulating regime. Another nice consideration is that it provides a non-perturbative approach to solving for g.