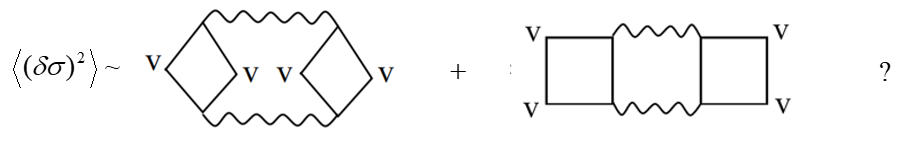
**Weak Localization Conductance Fluctuations**

One can make a diagrammatic calculation of the conductivity variance just as well. The diagrams, in terms of the Hikami boxes, would look like this:



We find (where q is a wavevector)



This sum would be different things for different geometries. And from here we can get the conductance fluctuations of course. At least in Q1D, we find (think this suffers from g-definition issue, i.e. counting/not counting spins, and should divide g by 2, to get 2/15).



(subscript 2 means second cumulant, which is variance) Beenaker says that Diffusons and Cooperons contribute equally in the case of TRS. Without TRS, only the Diffusons do, and so we get ½ the TRS value, which is why we divide by β. This universal result accords with our semi-classical calculation done earlier. It seems P. Lee (’87) calculate the variance in 3D and found:



What about other geometries?