From Vinck, et al, 2012, the equation for PPC estimator P2 is:

In the equation, M is the set of all trials and L is the set of all trials minus trial m.

We can distribute the normalization factors and use the distributive property to make the equation:

We can see these are both averages, so let’s simplify:

Next, distribute again…

This would be simpler if we were working with one set and no subsets, so let’s add and subtract :

And then distribute:

And finally, we see that the two sums in the “middle” are identical, so lets change that:

Finally, let’s change those auto-dot-products to magnitude squared operations: