

To count the number of symmetrized states of k particles in n boxes, where more than one particle can be in a particular box - just look at the combinations of k particles in $n+k-1$ slots - and interpret each combination as k particles in n boxes in the following way: Read along the combination. At the start of the combination, you're at the first box. If a slot is empty, skip to the next box. If a slot has a particle in it, fill the box you're on. Keep on filling that box until you come to another empty slot, then move on to the next box.

By "combinations" I mean the possible arrangements of particles where the identity of each particle doesn't matter - they aren't colored. So the number of combinations of 2 particles in $n+1$ boxes is $(n+1)n/2$.

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