

QM3
THE SECOND
4TH PROBLEM

[THIS IS PROBABLY VERY WRONG
BUT IT ILLUSTRATES WHAT I DON'T
GET SO I'LL LEAVE IT HERE]

SPIN 1 \Rightarrow BOSON \Rightarrow EXCHANGE SYMMETRIC.

ASSUMPTION:

IT CAN DECAY ONLY IF IT CAN
BE WRITTEN AS A TENSOR
PRODUCT OF TWO SUCH
PARTICLES

FOR THE COMPOSITE SYSTEM: $|1, m_1\rangle$

SPIN=1 \Rightarrow J=1 $\Rightarrow M_J=1, 0$

$|1, 1\rangle = |1, 0\rangle|1, 1\rangle - |1, 1\rangle|1, 0\rangle$

(LETS NOT CARE ABOUT
NORMALIZATION)

OR

$|1, 0\rangle = |1, 1\rangle|1, -1\rangle - |1, -1\rangle|1, 1\rangle$

$|1, 1\rangle$ CAN DECAY INTO $|1, 0\rangle \& |1, 1\rangle$

$|1, 0\rangle$ CAN DECAY INTO $|1, 1\rangle \& |1, -1\rangle$

These are not identical particles with
spin 0.