The Quantum Mechanics of Spin sec: quantum mechanics of spin Pauli Matrices sec: pauli matrices

We have the following relations

subequations empheq[box=]align split $[S_i, S_j] = \varepsilon_{ijk} i S_k$

We have two states for spin 1/2 align* $\alpha = pmatrix1$

And we can know align* $S^2\alpha = 34^2\alpha; S^2\beta = 34^2\beta$