

Discuss the origin of two energy levels of an electron in the presence of magnetic field. Draw the suitable diagram also.

Answer:

The splitting of *energy levels* in *presence of magnetic field* is known as the Zeeman effect.

According to it, for singlet states, the spin is zero and the total angular momentum J is equal to the orbital angular momentum L . When placed in an external magnetic field, the energy of the atom changes due to the energy of its magnetic moment in the field (Figure 1).

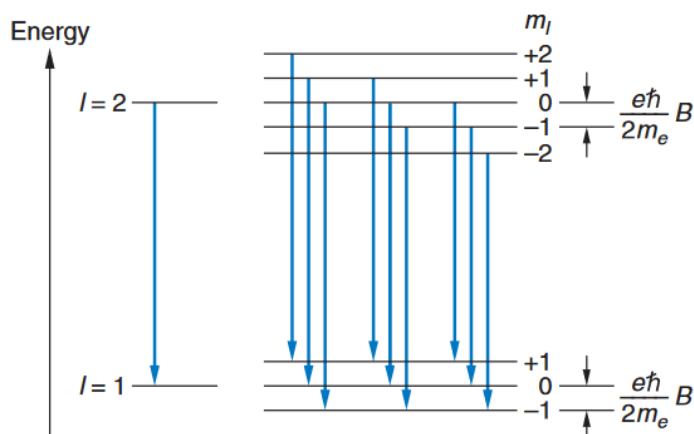


Figure 1 - Zeeman effect¹

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¹ [The Zeeman effect](#). Modern Physics.