

Neutralino Mixing

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Abstract

Here, I go through the essentials of neutralinos, where they are found in the MSSM superlagrangian, and the neutralino mixing matrix with its diagonalisation.

1 Mixing matrix

$$M_{\tilde{\chi}^0} = \begin{bmatrix} M_1 & 0 & -m_Z c_\beta s_W & m_Z s_\beta s_W \\ 0 & M_2 & m_Z c_\beta c_W & -m_Z s_\beta c_W \\ -m_Z c_\beta s_W & m_Z c_\beta c_W & 0 & -\mu \\ m_Z s_\beta s_W & -m_Z s_\beta c_W & -\mu & 0 \end{bmatrix}$$