

The neutralino mass matrix, although not Hermitian, is a symmetric complex 4×4 matrix so a special case of the singular value decomposition with " $U^* L = R$ " can be used — so

$$M_{\tilde{N}} = U^* M_{\text{Neutralino}} U^T$$

with U a 4×4 unitary matrix & $M_{\tilde{N}}$ diagonal.

As before $M_{\text{Neutralino}} M_{\text{Neutralino}}^\dagger$ is Hermitian and diagonalized by

$$M_{\tilde{N}}^2 = U^* M_{\text{Neut.}} M_{\text{Neut.}}^\dagger U^T$$

The eigenvalues & vectors can be found but are cumbersome. See Mathematical notes.
