assmannian $G(2,4)$ of 2-planes in $\mathbb{C}^4$, viewed primarily as the set of lines in $\mathbb{P}^3$. Recall from Section 5 of Chapter 1 that the Plücker embedding

$$G(2,4) \longrightarrow \mathbb{P}(\Lambda^2 \mathbb{C}^4) = \mathbb{P}^5$$

is given by mapping the 2-plane Λ spanned by vectors $v_1, v_2 \in \mathbb{C}^4$ into the wedge product $v_1 \wedge v_2 \in \Lambda^2 \mathbb{C}^4$.

☞ See P209 ⌟

As was proved there, a general multivector ω will be decomposable – that is, of the form $v_1 \wedge v_2$ – exactly when

$$\omega \wedge \omega = 0.$$

☞ P209 ~ P211, especially, P211. ⌟

This is a quadratic relation: the image of $G(2,4)$ under the Plucker embedding is therefore a quadric hypersurface in $\mathbb{P}^5$, which we will henceforth denote by G.

☞ See P211. ⌟