When $n=4$ we find the single equation

$$\lambda_{12}\lambda_{34} - \lambda_{13}\lambda_{24} + \lambda_{14}\lambda_{23} = 0$$

expressing the condition that $\Lambda \in \mathbb{P}(\Lambda^2\mathbb{C}^4) \cong \mathbb{P}^5$ be decomposable. In other words, $G(2,4)$ is naturally realized as a nonsingular quadric hypersurface in $\mathbb{P}^5$. We will see more of this in the final chapter.

Γ $K=2$, $n=4$. $\Lambda = \frac{1}{2}(\lambda_{12}\, e_1 \wedge e_2 + \lambda_{13}\, e_1 \wedge e_3 + \lambda_{14}\, e_1 \wedge e_4 + \lambda_{23}\, e_2 \wedge e_3 + \lambda_{24}\, e_2 \wedge e_4 + \lambda_{34}\, e_3 \wedge e_4)$

$$\Rightarrow \Lambda \wedge \Lambda = \frac{1}{4}(\lambda_{12}\lambda_{34} - \lambda_{13}\lambda_{24} + \lambda_{14}\lambda_{23})\, e_1 \wedge e_2 \wedge e_3 \wedge e_4 = 0$$

$$\Rightarrow \lambda_{12}\lambda_{34} - \lambda_{13}\lambda_{24} + \lambda_{14}\lambda_{23} = 0$$

⅃

2. Riemann Surfaces and Algebraic Curves

The dominant theme of this chapter is the interplay between the extrinsic projective geometry of algebraic curves and the intrinsic structure of Riemann surfaces. The subject, initially studied in extrinsic terms, underwent a basic shift in viewpoint with the introduction of the notion of abstract Riemann surfaces; nonetheless, the central aspects of the theory of algebraic curves as presented here are the same in either approach. Most of the results of this chapter were stated, if not pro-