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On the structure of polarized manifolds with total deficiency one, II

By Takao FUJITA

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Introduction.

This is the second part of the study of polarized manifolds (M, L) with $\Delta(M, L)=1$. In this part we consider those with $d(M, L)=5$ and we prove the following

THEOREM. *Any polarized manifold (M, L) with $\Delta(M, L)=1$, $d(M, L)=5$ is isomorphic to a linear section of $Gr(5, 2)$ embedded by the Plücker coordinate. Here $Gr(5, 2)$ denotes the Grassmann variety parametrizing 2-dimensional linear subspaces of $\boldsymbol{C}^5$.*

Notation, convention and terminology.

We use the same notation as in the first part [**5**] except a few new symbols listed below. In particular, vector bundles are confused with locally free sheaves. Tensor products of line bundles are denoted by additive notation.

Example of symbols in the same use as in [**5**].

$\{Z\}$: The homology class defined by an analytic subset Z.

$|L|$: The complete linear system associated with a line bundle L.

L_T: The pull back of L to a space T by a given morphism.

However, when there is no danger of confusion, we OFTEN write L instead of L_T.

$[\Lambda]$: The line bundle defined by a linear system Λ.

$Bs\Lambda$: The intersection of all the members of Λ.

ρ_Λ: The rational mapping defined by Λ.

K^M: The canonical bundle of a manifold M.

$Q_C(M)$: The blowing up of M with center C.

E_C: The exceptional divisor on $Q_C(M)$ over C.

$E^\vee$: The dual bundle of a vector bundle E.

$\mathcal{F}[E]:=\mathcal{F}\otimes_{\mathcal{O}}\mathcal{E}$ for a coherent sheaf $\mathcal{F}$, where $\mathcal{E}$ is the locally free sheaf of sections of E.

$\boldsymbol{P}(E):=E^\vee-\{0\text{-section}\}/\boldsymbol{C}^\times$.