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# REMARKS TO THE UNIQUENESS PROBLEM OF MEROMORPHIC MAPS INTO $P^N(C)$, IV

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## § 1. Introduction

Let $H_1, H_2, \cdots, H_{N+2}$ be hyperplanes in $P^N(C)$ located in general position and $\nu_1, \nu_2, \cdots, \nu_{N+2}$ divisors on $C^n$. We consider the set $\mathscr{F}(H_i, \nu_i)$ of all non-degenerate meromorphic maps of $C^n$ into $P^N(C)$ such that the pull-backs $\nu(f, H_i)$ of the divisors $(H_i)$ on $P^N(C)$ by $f$ are equal to $\nu_i$ for any $i = 1, 2, \cdots, N+2$. In the previous paper [6], the author showed that $\mathscr{F} := \mathscr{F}(H_i, \nu_i)$ cannot contain more than $N+1$ algebraically independent maps. Relating to this, the following theorem will be proved.

THEOREM. *The set $\mathscr{F}$ is finite.*

We give here an example which shows that the number $\sharp\mathscr{F}$ of elements in $\mathscr{F}$ is not less than $(N+1)!$. Take $N+1$ nowhere zero entire functions $h_1, \cdots, h_{N+1}$ such that $h_i/h_j \not\equiv$ const if $i \neq j$, and define

$$F := h_1 + h_2 + \cdots + h_{N+1}.$$

We consider hyperplanes

$$(1) \qquad \begin{aligned} H_i \ &: w_i = 0 \qquad (1 \leqq i \leqq N+1) \\ H_{N+2} &: w_1 + w_2 + \cdots + w_{N+1} = 0 \end{aligned}$$

in $P^N(C)$ and divisors

$$\begin{aligned} \nu_i &= 0 \qquad (1 \leqq i \leqq N+1) \\ \nu_{N+2} &:= \nu_F \end{aligned}$$

on $C^n$, where $w_1 : w_2 : \cdots : w_{N+1}$ are homogeneous coordinates on $P^N(C)$ and $\nu_F$ denotes the divisor defined by the zero-multiplicity of $F$. Then, $\mathscr{F} := \mathscr{F}(H_i, \nu_i)$ contains

$$f^\sigma = h_{\sigma(1)} : h_{\sigma(2)} : \cdots : h_{\sigma(N+1)}$$

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