

424. 円系ノ幾何

松村宗治(台北大)

吾々ハ円系表面ヲ考ヘ $t = \text{const.}$, $\tau = \text{const.}$ ハ
其表面上ノ媒介曲線ヲアルトスル。

φ を以て測地線が $\tau = \text{const.}$ の角をなす
 せば

$$(1) \quad \tan \varphi = \frac{\sqrt{(\theta_t \theta_t)(\theta_\tau \theta_\tau) - (\theta_t \theta_\tau)^2} d\tau}{(\theta_t \theta_t) dt + (\theta_t \theta_\tau) d\tau}$$

此、 $\varphi(t, \tau)$ が合つたらば此、測地線ハ

$$(2) \quad (\theta_t \theta_t) \sin \varphi dt + [(\theta_t \theta_\tau) \sin \varphi - \sqrt{(\theta_t \theta_t)(\theta_\tau \theta_\tau) - (\theta_t \theta_\tau)^2} \cos \varphi] d\tau = 0$$

ヲ積分スルコトニヨリ其ノ式が得ラレル。

尚亦 orthogonalen Grenzkreise, 式ハ

$$(3) \quad (\theta_t \theta_t) \cos \varphi dt + [(\theta_t \theta_\tau) \cos \varphi + \sqrt{(\theta_t \theta_t)(\theta_\tau \theta_\tau) - (\theta_t \theta_\tau)^2} \sin \varphi] d\tau = 0$$

ヲ積分スルコトニヨリ得ラレル。

尚亦

$$(4) \quad \frac{(\theta_t \theta_t) \frac{\partial \varphi}{\partial \tau} - (\theta_t \theta_\tau) \frac{\partial \varphi}{\partial t}}{\sqrt{(\theta_t \theta_t)(\theta_\tau \theta_\tau) - (\theta_t \theta_\tau)^2}} dt + \frac{(\theta_\tau \theta_\tau) \frac{\partial \varphi}{\partial t} - (\theta_t \theta_\tau) \frac{\partial \varphi}{\partial \tau}}{\sqrt{(\theta_t \theta_t)(\theta_\tau \theta_\tau) - (\theta_t \theta_\tau)^2}} d\tau$$

ハ一ツノ函数、vollständige Differential ニア
 ル。

$\varphi = \text{const.}$ が Isothermensystem = ヲク スル ナラ
 ば此、曲線、orthogonaltrajektorien ハ

$$(5) \quad \frac{(\theta_t \theta_t) \frac{\partial \varphi}{\partial \tau} - (\theta_t \theta_\tau) \frac{\partial \varphi}{\partial t}}{\sqrt{(\theta_t \theta_t)(\theta_\tau \theta_\tau) - (\theta_t \theta_\tau)^2}} dt - \frac{(\theta_\tau \theta_\tau) \frac{\partial \varphi}{\partial t} - (\theta_t \theta_\tau) \frac{\partial \varphi}{\partial \tau}}{\sqrt{(\theta_t \theta_t)(\theta_\tau \theta_\tau) - (\theta_t \theta_\tau)^2}} d\tau = 0$$

ニアル。

尚亦 $t = \text{const.}$, $\tau = \text{const.}$ ノ間、角ヲ $\delta \theta$ ト
 せば

$$(6) \cos \Omega = \frac{(\theta_t \theta_c)}{\sqrt{(\theta_c \theta_t)(\theta_c \theta_c)}}, \quad \sin \Omega = \frac{\sqrt{(\theta_c \theta_t)(\theta_c \theta_c) - (\theta_t \theta_c)^2}}{\sqrt{(\theta_c \theta_t)(\theta_c \theta_c)}}$$

デアル。

(6) カラ $\frac{\partial \Omega}{\partial t}$, $\frac{\partial \Omega}{\partial c}$ 等ヲ求メ得ベシ。