



Title	円系表面上ノ曲線ニツイテ
Author(s)	松村, 宗治
Citation	全国紙上数学談話会. 1936, 98, p. 9-10
Version Type	VoR
URL	https://doi.org/10.18910/74370
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445. 円系表面上ノ曲線=ツイテ

松村 京治 (台北大)

吾々ノ円系表面上=

$$\phi(t, \tau) = c, \quad \psi(t, \tau) = c', \quad (c, c' \text{ハ定数})$$

ナル二曲線ヲ考ヘルト其ノ間ノ角 χ = 對シテ次ノ關係成立スル。

$$(1) \begin{cases} \cos \chi = \frac{(\theta_t \theta_\tau) \phi_2 \psi_2 - (\theta_t \theta_\tau) \{\phi_2 \psi_1 + \psi_2 \phi_1\} + (\theta_\tau \theta_t) \phi_1 \psi_1}{\{(\theta_t \theta_t) \phi_2^2 - 2(\theta_t \theta_\tau) \phi_2 \phi_1 + (\theta_\tau \theta_\tau) \phi_1^2\}^{\frac{1}{2}} \{(\theta_t \theta_t) \psi_2^2 - 2(\theta_t \theta_\tau) \psi_2 \psi_1 + (\theta_\tau \theta_\tau) \psi_1^2\}^{\frac{1}{2}}} \\ \sin \chi = \frac{\sqrt{\{(\theta_t \theta_t)(\theta_\tau \theta_\tau) - (\theta_t \theta_\tau)^2\}} \{\phi_2 \psi_1 - \psi_2 \phi_1\}}{\text{(分母ハ上ト同シ)}} \end{cases}$$

$$\text{コゝニ} \quad \phi_1 = \frac{\partial \phi}{\partial t}, \quad \phi_2 = \frac{\partial \phi}{\partial \tau}, \quad \psi_1 = \frac{\partial \psi}{\partial t}, \quad \psi_2 = \frac{\partial \psi}{\partial \tau}$$

デアル、[Forsyth: Diff. Geo., p. 35 参照]

コレハ台北大學紀要II = 放ケル拙著論文ノ一ツノ
應用デアル。

(1) カラ明 = $\tan \chi$, $\cot \chi$, $\sec \chi$, $\operatorname{cosec} \chi$ 等が
合ル、尚亦

$$(2) \quad \textcircled{H} \, dt^2 + 2\Phi \, dt \, d\tau + \Psi \, d\tau^2 = 0$$

ナルニ方向ノ間ノ角 χ ハ

$$(3) \quad \frac{\sin \chi}{\{(\theta_t \theta_t)(\theta_\tau \theta_\tau) - (\theta_t \theta_\tau)^2\} \{\Phi^2 - \textcircled{H} \Psi\}^{\frac{1}{2}}}$$

$$= \frac{\cos \chi}{(\theta_t \theta_t) \Psi - 2(\theta_t \theta_\tau) \Phi + (\theta_\tau \theta_\tau) \textcircled{H}}$$

ヲ與ヘラレルコト = ナル。

従ツテ (3) カラ合ルヌウ =

$$(\theta_t \theta_t) \Psi - 2(\theta_t \theta_\tau) \Phi + (\theta_\tau \theta_\tau) \textcircled{H} = 0$$

ハソノニ方向カ垂直ナル條件デアル。

(1) ノ第二ノ式ヲ

$$\alpha(t, \tau) = c, \quad \beta(t, \tau) = c', \quad \gamma(t, \tau) = c''$$

ヲ形成スル三角形 = 適用セバ平面上ノ三角形ノ正弦比例公式
= 相當スル公式が得ラル、答デアル。