K

S^3

S^1

S^3

$\varphi:$

$S^1 \hookrightarrow$

S^3

$K =$

$\varphi(S^1)$

$_injective_k not.png (it is not an injection), [width =$

$0.08] not_s mooth_k not.png (it is not smooth).$

$K_0 =$

$\varphi_0(S^1)$

$K_1 =$

$\varphi_1(S^1)$

φ_0

φ_1

$\Phi:$

$S^1 \times$

$[0,1] \hookrightarrow$

$S^3,$

$\Phi(x,t) =$

$\Phi_t(x)$

Φ_t

$t \in$

$[0,1]$

$\Phi_0 =$

φ_0

$\Phi_1 =$

φ_1

K_0

K_1

$\Psi =$

$\{\psi_t :$

$t \in$

$[0,1]\}$

$\psi(t) =$

ψ_t is continius on $\in$

$[0,1]$

$\psi_t :$

$S^3 \hookrightarrow$

$S^3,$

$\psi_0 =$

$id,$

$\psi_1(K_0) =$

$K_1.$

$\varphi(t) =$

$(\cos t, \sin t, 0)$

$t \in$

$[0, 2\pi]$

S^1

$$\overbrace{S^1 \sqcup \ldots \sqcup S^1}^{k}$$

S^3

S^3

D_π

π

L

$R^3 S^3$

R^2

S^2

$D_{\pi|_L}$

D

$()$

$()$

D

L

$\Longrightarrow$

R^3

Σ

$\partial \Sigma =$

L

0,8! Constructing a Seifert surface.

D_1

D_2

∂D_1

∂D_2

$_connect.png$

S^3

Σ

1! Genus