$\tau = c\kappa$.

$c=0$, 则 $\gamma(s) = (\int_0^s (\cos \int_0^u \kappa(t) \mathrm{d}t + a) \mathrm{d}u + b, \pm \int_0^s (\sin \int_0^u \kappa(t) \mathrm{d}t + a) \mathrm{d}u + c)$

$c>0$ 时, 令 $\theta(s)$ 满足 $\theta'(s) = \kappa(s)$, 从而

$$\begin{aligned} t_\theta =& t_s/\theta_s = n \\ n_\theta =& n_s/\theta_s = -t - cb \\ b_\theta =& b_s/\theta_s = cn \end{aligned}$$

从而 $n_{\theta\theta} + (1+c^2)n = 0$. 令 $c_0 = \sqrt{1+c^2}$, 则

$$n(\theta) = \cos{(c_0\theta)} e_1 + \sin{(c_0\theta)} e_2.$$

解得

$$b(\theta) = \frac{c}{c_0} \sin{(c_0\theta)} e_1 - \frac{c}{c_0} \cos{(c_0\theta)} e_2 - \frac{1}{c_0} e_3.$$

$$t(\theta) = \frac{1}{c_0} \sin{(c_0\theta)} e_1 - \frac{1}{c_0} \cos{(c_0\theta)} e_2 \pm \frac{c}{c_0} e_3.$$

$\theta = 0$ 时

$$\begin{pmatrix} t \\ n \\ b \end{pmatrix} = \begin{pmatrix} 0 & -1/c_0 & \pm c/c_0 \\ 1 & 0 & 0 \\ 0 & -c/c_0 & -1/c_0 \end{pmatrix} \begin{pmatrix} e_1 \\ e_2 \\ e_3 \end{pmatrix}$$

(转换矩阵为正交矩阵, 故应取正号).

此时

$$\begin{aligned} \gamma =& \int n \mathrm{d}s \\ =& \frac{\int \left[\sin\left(\frac{\int_0^u \kappa(s) + c_1}{\sqrt{1+c^2}} \right) e_1 - \cos\left(\frac{\int_0^u \kappa(s) + c_1}{\sqrt{1+c^2}} \right) e_2 + c e_3 \right] \mathrm{d}s}{\sqrt{1+c^2}} \end{aligned}$$