[redacted] $Y \sim N(0, \Sigma)$ $\begin{pmatrix} X \\ Y \end{pmatrix} \sim N(0, \Sigma)$

$cov(X''(s)) - cov(X''(s), X'(s))$ $X|Y=a$ □ + □ ↙ indep of Y

$$cov(X''(0) \mid X'(0) = X''(0)t = 0)$$

$$= \begin{pmatrix} r^{(4)}(0) & r^{(3)}(0) & r^{(4)}(0)t \\ r^{(3)}(0) & r^{(2)}(0) & r^{(3)}(0)t \\ r^{(4)}(0)t & r^{(3)}(0)t & t^2 r^{(4)}(0) \end{pmatrix}$$

start to $r^{(3)} = 0$

$$= \begin{pmatrix} r^{(4)}(0) & & r^{(4)}(0)t \\ & r^{(2)}(0) & \\ r^{(4)}(0)t & & t^2 r^{(4)}(0) \end{pmatrix}$$

$$r^{(4)}(0) - \begin{pmatrix} 0, & r^{(4)}(0)t \end{pmatrix} \begin{pmatrix} r^{(2)}(0) & \\ & t^2 r^{(4)}(0) \end{pmatrix}^{-1}$$

$$= 0 !$$