

1. Given the following deformation

$$x_1 = \cos(\tau X_3)X_1 - \sin(\tau X_3)X_2$$

$$x_2 = \sin(\tau X_3)X_1 + \cos(\tau X_3)X_2$$

$$x_3 = X_3$$

- (1). Plot the torsion behavior.
- (2). Find F .
- (3). Find R, U, V .
- (4). Find C, B .
- (5). Find Φ, Σ, Ψ^T .
- (6). Find H and L . (if $\tau \ll 1$)
- (7). Find Ω and ω . (if $\tau \ll 1$)
- (8). Find ϵ . (if $\tau \ll 1$)