Subject parameter distribution: $\underbrace{\begin{bmatrix} \text{T0m\_ly}_i \\ \text{mm\_y}_i \end{bmatrix}}_{\boldsymbol{\phi}(i)} \sim \text{tform}\left\{ \text{N}\left(\begin{bmatrix} \text{raw\_T0m\_ly} \\ \text{raw\_mm\_y} \end{bmatrix}, \begin{bmatrix} \text{raw\_PCov\_1\_1} & \text{raw\_PCov\_2\_1} \\ \text{raw\_PCov\_2\_1} & \text{raw\_PCov\_2\_2} \end{bmatrix} \right) \right\}$

Initial latent states: $\underbrace{\begin{bmatrix}\text{ly}\end{bmatrix}(t_0)}_{\boldsymbol{\eta}(t_0)} \sim \text{N}\left(\underbrace{\underbrace{\begin{bmatrix}\text{T0m\_ly}\end{bmatrix}}}_{\text{T0MEANS}}, \underbrace{\underbrace{\mathit{covsdcor}\left\{\begin{bmatrix}\text{Pcorsqrt\_1\_1}\end{bmatrix}\right\}}_{\mathbf{Q^*}_{t0}}}_{\text{T0VAR}} \right)$

Deterministic change: $\underbrace{\text{d}\begin{bmatrix}\text{ly}\end{bmatrix}(t)}_{\text{d}\boldsymbol{\eta}(t)} = \left(\underbrace{\underbrace{\begin{bmatrix}\text{drift\_ly}\end{bmatrix}}_{\mathbf{A}}}_{\text{DRIFT}} \underbrace{\begin{bmatrix}\text{ly}\end{bmatrix}(t)}_{\boldsymbol{\eta}(t)} + \underbrace{\underbrace{\begin{bmatrix}0\end{bmatrix}}_{\mathbf{b}}}_{\text{CINT}} \right) \text{d}t \quad +$

Random change: $\underbrace{\underbrace{\mathit{cholsdcor}\left\{\begin{bmatrix}\text{diff\_ly}\end{bmatrix}\right\}}_{\mathbf{G}}}_{\text{DIFFUSION}} \underbrace{\text{d}\begin{bmatrix}W_1\end{bmatrix}(t)}_{\text{d}\mathbf{W}(t)}$

Observations: $\underbrace{\begin{bmatrix}\text{y}\end{bmatrix}(t)}_{\mathbf{Y}(t)} = \underbrace{\underbrace{\begin{bmatrix}1\end{bmatrix}}_{\boldsymbol{\Lambda}}}_{\text{LAMBDA}} \underbrace{\begin{bmatrix}\text{ly}\end{bmatrix}(t)}_{\boldsymbol{\eta}(t)} + \underbrace{\underbrace{\begin{bmatrix}\text{mm\_y}\end{bmatrix}}_{\boldsymbol{\tau}}}_{\text{MANIFESTMEANS}} + \underbrace{\underbrace{\begin{bmatrix}0.2\end{bmatrix}}_{\boldsymbol{\Theta}}}_{\text{MANIFESTVAR}} \underbrace{\begin{bmatrix}\epsilon_1\end{bmatrix}(t)}_{\boldsymbol{\epsilon}(t)}$

Latent noise per time step : $\Delta\left[W_{j\in[1,1]}\right](t-u) \sim \text{N}(0, t-u)$ Observation noise: $\left[\epsilon_{j\in[1,1]}\right](t) \sim \text{N}(0,1)$

cholsdcor converts lower tri matrix of std dev and unconstrained correlation to Cholesky factor covariance.
covsdcor = transposed cross product of cholsdcor, to give covariance.
See Driver & Voelkle (2018) p11.