

$$\begin{pmatrix} -V(\Lambda(t)), \Delta(t) \end{pmatrix} \begin{pmatrix} \sigma^{-2} & 0 \\ 0 & \Lambda(t)^T \end{pmatrix} \begin{pmatrix} Y(t) \\ \nabla^T Y(t) \end{pmatrix}$$

$$= \left( -V(\Lambda(t)), \Delta(t) \right) \begin{pmatrix} \sigma^{-2} Y(t) \\ \Lambda(t)^T \nabla^T Y(t) \end{pmatrix}$$

$$V(\nabla^2 Y(t)) \quad \sigma^{-2} Y(t) V(\Lambda(t)) + \Delta(t) \Lambda(t)^T \nabla^T Y(t)$$

$$M(\Lambda, \Delta)$$

$$\Rightarrow \sum_i Y_i V(\nabla^2 Y(t))$$

} inner of.

$$= -\sigma^{-2} \sum Y_i^2 V(\Lambda(t)) + \Delta(t) \Lambda(t)^T \underbrace{\sum Y_i \nabla^T Y(t)}_{= \nabla u}$$

$$= -\sigma^{-2} u V(\Lambda(t)) + \Lambda(t) \Lambda(t)^T \nabla u$$

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