

$$e = (1:0) \in \left\{ \begin{array}{c} \Gamma_0 \times K \\ \Psi \mathbb{K}_{m+k} \end{array} \right\} = \frac{(u:v) \in \left\{ \begin{array}{c} \Gamma_0 \times K \\ \mathbb{K}_{m+k} \end{array} \right\}}{\left[\begin{array}{ccc|ccc} 1 & u & v & 0 & 1 & 0 \\ & & & 1 & 0 & 0 \\ & & & 0 & 0 & -1 \end{array} \right] \begin{bmatrix} 1 \\ \dot{u} \\ \dot{v} \end{bmatrix} = u + \dot{u} - v\dot{v} > 0} \subset \left\{ \begin{array}{c} \Gamma_0 \times K \\ \mathbb{K}_{m+k} \end{array} \right\}$$

$$(u:v) S_e = (u:v) \text{ Int } \Psi = (u^{-1}: -u^{-1}v)$$

$$e = \frac{1}{0} \Big| \frac{0}{0} \in \left\{ \begin{array}{c} \Gamma_0 \times H \\ \Psi \mathbb{K}_{m+k} \end{array} \right\} = \frac{\nabla = \frac{u}{\Upsilon} \Big| \frac{v}{w} \in \left\{ \begin{array}{c} \Gamma_0 \times H \\ \Psi \mathbb{K}_{m+k} \end{array} \right\}}{\left[\begin{array}{cc|cc} 0 & 0 & 1 & 0 \\ 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & -1 \end{array} \right] \begin{bmatrix} 1 \\ \nabla^* \end{bmatrix} = \frac{u + \dot{u} - v\dot{v}}{\Upsilon - w\dot{v}} \Big| \frac{\dot{\Upsilon} - v\dot{w}}{1 - w\dot{w}} > 0} \subset \left\{ \begin{array}{c} \Gamma_0 \times H \\ \Psi \mathbb{K}_{m+k} \end{array} \right\}$$

$$1 - w\dot{w} > 0: u + \dot{u} - \Re v \overbrace{1 - w\dot{w}}^{-1} \underbrace{\dot{v} - \dot{w}\Upsilon}^{-1} + \underbrace{\dot{\Upsilon} - v\dot{w}}^{-1} \underbrace{1 - w\dot{w}}^{-1} \Upsilon > 0$$

$$\frac{u}{\Upsilon} \Big| \frac{v}{w} S_e = \frac{u}{\Upsilon} \Big| \frac{v}{w} \text{ Int } \Psi = \frac{u^{-1}}{-\Upsilon u^{-1}} \Big| \frac{-u^{-1}v}{-w}$$

$$e = \begin{bmatrix} 0 & 1 & 0 \\ -1 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix} \in \left\{ \begin{array}{c} K \times K \times H \\ \Psi \mathbb{K}_{2m+k} \end{array} \right\} =$$

$$\nabla = \begin{bmatrix} a & b & v \\ -\dot{b} & d & y \\ -\dot{v} & -\dot{y} & w \end{bmatrix} \in \left\{ \begin{array}{c} K \times K \times H \\ \Psi \mathbb{K}_{2m+k} \end{array} \right\} \subset \left\{ \begin{array}{c} K \times K \times H \\ \Psi \mathbb{K}_{2m+k} \end{array} \right\}$$

$$\left[\begin{array}{cc|cc} 0 & 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & -1 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 & 0 \\ 0 & -1 & 0 & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & -1 \end{array} \right] \begin{bmatrix} 1 \\ \nabla^* \end{bmatrix} = \begin{bmatrix} b + \dot{b} - v\dot{v} & -a + \dot{d} - v\dot{y} & -\bar{y} - v\dot{w} \\ d - \dot{a} - y\dot{v} & \dot{b} + \bar{b} - y\dot{y} & \bar{v} - y\dot{w} \\ -\dot{y} - w\dot{v} & \dot{b} - w\dot{y} & 1 - w\dot{w} \end{bmatrix} > 0$$

$$\begin{bmatrix} a & b & v \\ -\dot{b} & d & y \\ -\dot{v} & -\dot{y} & w \end{bmatrix} S_e = \begin{bmatrix} a & b & v \\ -\dot{b} & d & y \\ -\dot{v} & -\dot{y} & w \end{bmatrix} \text{ Int } \Psi = \frac{\begin{pmatrix} -d & -\dot{b} \\ b & -a \end{pmatrix}^{-1}}{\begin{bmatrix} \dot{y} & -\dot{v} \end{bmatrix} \begin{pmatrix} -d & -\dot{b} \\ b & -a \end{pmatrix}^{-1}} \Big| \frac{-\begin{pmatrix} b & -a \\ d & \dot{b} \end{pmatrix}^{-1} \begin{bmatrix} v \\ y \end{bmatrix}}{-\begin{bmatrix} \dot{y} & -\dot{v} \end{bmatrix} \begin{pmatrix} b & -a \\ d & \dot{b} \end{pmatrix}^{-1} \begin{bmatrix} v \\ y \end{bmatrix} - w}$$