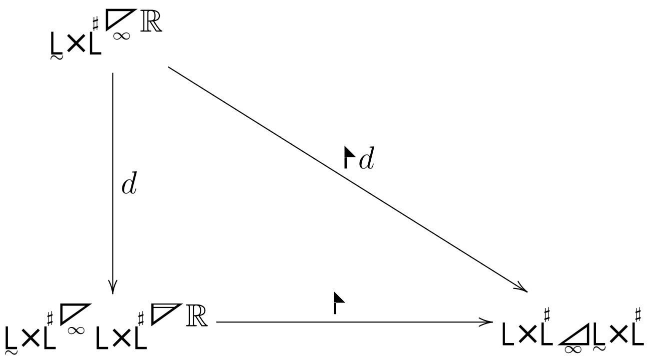
$$L \times L^{\sharp} \in \mathbb{R}\triangledown_{\infty} \quad \text{symplectic}$$



$$\underline{L \times L^{\sharp}}_{h:y} = L \times L^{\sharp} \ni L:\rceil \mapsto \underbrace{L:\rceil}_{h:y} = L + \rceil \in \mathbb{R} \Rightarrow \overbrace{\;}^{h:y} = \underbrace{-:}\in \underline{L \times L^{\sharp}}_{h:y}$$

$$\begin{bmatrix} \cdot \\ \cdot \end{bmatrix} = \Rightarrow \begin{bmatrix} \cdot \\ L:\rceil \end{bmatrix}_{h:y} = \underbrace{L:\rceil}_{h:y} = L + \rceil = \begin{bmatrix} -: \\ L:\rceil \end{bmatrix}_{h:y}$$

$$L \times L^{\sharp} \ni h:y \sqcap {}_{h:y} \in \mathbb{R} \Rightarrow \overbrace{d}^{h:y} = \begin{bmatrix} -\frac{\partial}{\partial y} & \frac{\partial}{\partial h} \end{bmatrix} \in L \times L^{\sharp} = \overbrace{L_y}^{\sharp} \times L^{\sharp}_h$$

$$\underline{L \times L^{\sharp}}_{h:y} = L \times L^{\sharp} \ni L:\rceil \mapsto \underbrace{L:\rceil}_{h:y} \underbrace{d} = L\frac{\partial}{\partial h} + \frac{\partial}{\partial y}\rceil$$

$$_{h:y}\underbrace{\times} = -\frac{\partial}{\partial y}\frac{\partial}{\partial h} + \frac{\partial}{\partial y}\frac{\partial}{\partial h}$$

$$\text{LHS} = \begin{bmatrix} d \\ d \end{bmatrix}_{h:y} = \begin{bmatrix} -\frac{\partial}{\partial y}\frac{\partial}{\partial h} \\ -\frac{\partial}{\partial y}\frac{\partial}{\partial h} \end{bmatrix}_{h:y} = \text{RHS}$$