$$U \xrightarrow[\text{stet}]{\dot{\mathcal{A}}} {}_n\mathbb{K}^n$$

$$U \xrightarrow[\text{stet}]{\dot{b}} {}_n\mathbb{K}$$

$$\overset{U}{+}\blacktriangleright_{1+}{}_n\mathbb{K} = \frac{U \xrightarrow[\text{stet diff}]{\dot{y}} {}_n\mathbb{K}}{\dot{y}_{-} = \dot{\mathcal{A}}\,\dot{y} + \dot{b}: \quad {}_{i-}y = \mathcal{A}_i^{\,j}\,{}_j y + b_i} \text{ inhom Lsg-Raum}$$

$$\overset{U}{+}\blacktriangleright_{1+}{}_n\mathbb{K} + \overset{U}{\blacktriangleright}_{1+}{}_n\mathbb{K} \subset \overset{U}{+}\blacktriangleright_{1+}{}_n\mathbb{K}$$

$$\overset{U}{+}\blacktriangleright_{1+}{}_n\mathbb{K} - \overset{U}{+}\blacktriangleright_{1+}{}_n\mathbb{K} \subset \overset{U}{\blacktriangleright}_{1+}{}_n\mathbb{K}$$

$$\dot{u} \in \overset{U}{\blacktriangleright}_{1+}{}_n\mathbb{K} \wedge \dot{y} \in \overset{U}{+}\blacktriangleright_{1+}{}_n\mathbb{K} \Rightarrow \underline{\dot{u} + \dot{y}} = \dot{u}_{-} + \dot{y}_{-} = \overbrace{\dot{\mathcal{A}}\,\dot{u}} + \overbrace{\dot{\mathcal{A}}\,\dot{y} + \dot{b}} = \dot{\mathcal{A}}\,\overbrace{\dot{u} + \dot{y}} + \dot{b} \Rightarrow \dot{u} + \dot{y} \in \overset{U}{\blacktriangleright}_{1+}{}_n\mathbb{K}$$

$$\dot{y}' \in \overset{U}{+}\blacktriangleright_{1+}{}_n\mathbb{K} \Rightarrow \underline{\dot{y} - \dot{y}'} = \dot{y}_{-} - \dot{y}'_{-} = \overbrace{\dot{\mathcal{A}}\,\dot{y} + \dot{b}} - \overbrace{\dot{\mathcal{A}}\,\dot{y}' + \dot{b}} = \dot{\mathcal{A}}\,\overbrace{\dot{y} - \dot{y}'} \Rightarrow \dot{y} - \dot{y}' \in \overset{U}{\blacktriangleright}_{1+}{}_n\mathbb{K}$$

$$\text{part Lsg } \dot{p} \in \overset{U}{+}\blacktriangleright_{1+}{}_n\mathbb{K} \Rightarrow \overset{U}{+}\blacktriangleright_{1+}{}_n\mathbb{K} = \dot{p} + \overset{U}{\blacktriangleright}_{1+}{}_n\mathbb{K}$$

$$\subset: \quad \overset{U}{+}\blacktriangleright_{1+}{}_n\mathbb{K} - \dot{p} \subset \overset{U}{+}\blacktriangleright_{1+}{}_n\mathbb{K} - \overset{U}{+}\blacktriangleright_{1+}{}_n\mathbb{K} \subset \overset{U}{\blacktriangleright}_{1+}{}_n\mathbb{K}$$

$$\supset: \quad \dot{p} + \overset{U}{\blacktriangleright}_{1+}{}_n\mathbb{K} \subset \overset{U}{+}\blacktriangleright_{1+}{}_n\mathbb{K} + \overset{U}{\blacktriangleright}_{1+}{}_n\mathbb{K} \subset \overset{U}{+}\blacktriangleright_{1+}{}_n\mathbb{K}$$

$$ {}^{x}_{\cdot}\boldsymbol{\rceil} = {}^{x}_{\cdot}\text{4L}^{\cdot} \int_{o}^{x} {}_{\cdot}\text{4L}^{-1\cdot}\ {}_{\cdot}\text{Ч} \ \text{part sol} $$

$$ \text{Ansatz}\ {}^{x}_{\cdot}\boldsymbol{\rceil} = {}^{x}_{\cdot}\text{4L}^{\cdot}\ {}^{x}_{\cdot}u \Rightarrow {}^{x}_{\cdot}\text{ɥ}^{\cdot}\ {}^{x}_{\cdot}\text{4L}^{\cdot}\ {}^{x}_{\cdot}u + {}^{x}_{\cdot}\text{Ч} = {}^{x}_{\cdot}\text{ɥ}^{\cdot}\ {}^{x}_{\cdot}\boldsymbol{\rceil} + {}^{x}_{\cdot}\text{Ч} = {}^{x}_{\cdot}\underline{\boldsymbol{\rceil}} = {}^{x}\underline{{}_{\cdot}\text{4L}^{\cdot}\,{}_{\cdot}u} = {}^{x}_{\cdot}\underline{\text{4L}}^{\cdot}\ {}^{x}_{\cdot}u + {}^{x}_{\cdot}\text{4L}^{\cdot}\ {}^{x}_{\cdot}\underline{u} $$

$$ = {}^{x}_{\cdot}\text{ɥ}^{\cdot}\ {}^{x}_{\cdot}\text{4L}^{\cdot}\ {}^{x}_{\cdot}u + {}^{x}_{\cdot}\text{4L}^{\cdot}\ {}^{x}_{\cdot}\underline{u} \Rightarrow {}^{x}_{\cdot}\text{Ч} = {}^{x}_{\cdot}\text{4L}^{\cdot}\ {}^{x}_{\cdot}\underline{u} \Rightarrow {}^{x}_{\cdot}\text{4L}^{-1\cdot}\ {}^{x}_{\cdot}\text{Ч} = {}^{x}_{\cdot}\underline{u} \Rightarrow \int^{x} {}_{\cdot}\text{4L}^{-1\cdot}\ {}_{\cdot}\text{Ч} = {}^{x}_{\cdot}u $$

$$ \overset{U}{+}\blacktriangleright_{1+}{}_{n}\mathbb{K} \ni {}^{x}_{\cdot}\text{4L}^{\cdot}\ \underbrace{\int_{o}^{x} {}_{\cdot}\text{4L}^{-1\cdot}\,{}_{\cdot}\text{Ч} + {}_{\cdot}c} = {}^{x}_{\cdot}\text{4L}^{j}\ \underbrace{\int_{o}^{x} {}_{j}\text{4L}^{-1\cdot}\,{}_{\cdot}\text{Ч} + {}_{j}c} = \begin{bmatrix} {}^{x}_{1}\text{4L}^{\cdot}\ \underbrace{\int_{o}^{x} {}_{\cdot}\text{4L}^{-1\cdot}\,{}_{\cdot}\text{Ч} + {}_{\cdot}c} \\ {}^{x}_{n}\text{4L}^{\cdot}\ \underbrace{\int_{o}^{x} {}_{\cdot}\text{4L}^{-1\cdot}\,{}_{\cdot}\text{Ч} + {}_{\cdot}c} \end{bmatrix} = \begin{bmatrix} {}^{x}_{1}\text{4L}^{j}\ \underbrace{\int_{o}^{x} {}_{j}\text{4L}^{-1\cdot}\,{}_{\cdot}\text{Ч} + {}_{j}c} \\ {}^{x}_{n}\text{4L}^{j}\ \underbrace{\int_{o}^{x} {}_{j}\text{4L}^{-1\cdot}\,{}_{\cdot}\text{Ч} + {}_{j}c} \end{bmatrix} \ \text{gen sol} $$