$$\hat{g}\ (u) = \underbrace{\hat{g}\,(u) \mathbin{⧗} \tilde{g}\,(u)}\,\tilde{g}\ (u)$$

$$\hat{g}\ (tu) = t\,\hat{g}\ (u) = t\,\underbrace{\hat{g}\,(u) \mathbin{⧗} \tilde{g}\,(u)}\,\tilde{g}\ (u) \in \Omega^{1}_{\tilde{g}\,(u)}$$

$$\hat{\delta}_g\ (tu) = \tilde{\delta}_g\ (u)\ \underbrace{\hat{g}\,(u) \mathbin{⧗} \tilde{g}\,(u)}\,\frac{\varrho\left(t\hat{g}\,(u) \mathbin{⧗} \tilde{g}\,(u)\right)}{\varrho\,(t)}$$

$$v = \tilde{g}\ (u)$$

$$s = t\,\underbrace{\hat{g}\,(u) \mathbin{⧗} \tilde{g}\,(u)}$$

$$\int_{dt}^{\mathbb{R}^>} \varrho\,(t) \int_{du}^{S_1} \hat{\delta}_g\ (tu)\ ^{\hat{g}\,(tu)}\urcorner = \int_{dx}^{Z_1} \hat{\delta}_g\ (x)\ ^{\hat{g}\,(x)}\urcorner = \int_{dy}^{Z_1} {}^{y}\urcorner = \int_{ds}^{\mathbb{R}^>} \varrho\,(s) \int_{dv}^{S_1} {}^{sv}\urcorner$$

$$= \int_{ds}^{\mathbb{R}^>} \varrho\,(s) \int_{du}^{S_1} \tilde{\delta}_g\ (u)\ ^{s\tilde{g}\,(u)}\urcorner = \int_{du}^{S_1} \tilde{\delta}_g\ (u) \int_{ds}^{\mathbb{R}^>} \varrho\,(s)\ ^{s\tilde{g}\,(u)}\urcorner$$

$$= \int_{du}^{S_1} \tilde{\delta}_g\ (u)\ \underbrace{\hat{g}\,(u) \mathbin{⧗} \tilde{g}\,(u)} \int_{dt}^{\mathbb{R}^>} \varrho\left(t\hat{g}\,(u) \mathbin{⧗} \tilde{g}\,(u)\right)\ ^{t\,\underbrace{\hat{g}\,(u) \mathbin{⧗} \tilde{g}\,(u)}\,\tilde{g}\,(u)}\urcorner$$

$$= \int_{dt}^{\mathbb{R}^>} \varrho\,(t) \int_{du}^{S_1} \tilde{\delta}_g\ (u)\ \underbrace{\hat{g}\,(u) \mathbin{⧗} \tilde{g}\,(u)}\,\frac{\varrho\left(t\hat{g}\,(u) \mathbin{⧗} \tilde{g}\,(u)\right)}{\varrho\,(t)}\ ^{\hat{g}\,(tu)}\urcorner$$

$$\underline{\hat{\delta}}_\gamma\ (tu) = \underline{\tilde{\delta}}_\gamma\ (u) + \hat{\gamma}\ (u) \mathbin{⧗} u + u \mathbin{⧗} \tilde{\gamma}\ (u) + t\,\underbrace{\hat{\gamma}\,(u) \mathbin{⧗} u + u \mathbin{⧗} \tilde{\gamma}\,(u)}\ {}^{t}\underline{\varrho}\,/\,{}^{t}\varrho$$

$$= \underline{\tilde{\delta}}_\gamma\ (u) + \left(1 + t\,{}^{t}\underline{\varrho}/{}^{t}\varrho\right)\ \underbrace{\hat{\gamma}\,(u) \mathbin{⧗} u + u \mathbin{⧗} \tilde{\gamma}\,(u)}$$

$$\hat{\gamma}_w(u) \bowtie u + u \bowtie \tilde{\gamma}_w(u) = (1+\alpha)\,\underbrace{w \bowtie u + u \bowtie w}$$

$$\hat{\gamma}_w(u) = 2w\overset{*}{u}u + \alpha\,\overbrace{w \bowtie u + u \bowtie w}\,u$$

$$\hat{\gamma}_w(u) \bowtie u = \underbrace{2w\overset{*}{u}u + \alpha\,\overbrace{w \bowtie u + u \bowtie w}\,u} \bowtie u = 2w \bowtie \underbrace{u\overset{*}{u}u} + \alpha\,\overbrace{w \bowtie u + u \bowtie w} = 2w \bowtie u + \alpha\,\overbrace{w \bowtie u + u \bowtie w}$$

$$\tilde{\gamma}_w(u) = w_1 - \overset{*}{w}_1 + w_{1/2}$$

$$u \bowtie \tilde{\gamma}_w(u) = u \bowtie \underbrace{w_1 - \overset{*}{w}_1 + w_{1/2}} = u \bowtie \underbrace{w_1 - \overset{*}{w}_1} = u \bowtie w - u \bowtie \underbrace{u\overset{*}{w}u} = u \bowtie w - w \bowtie \underbrace{u\overset{*}{u}u} = u \bowtie w - w \bowtie u$$

$$\text{LHS} = 2w \bowtie u + \alpha\,\overbrace{w \bowtie u + u \bowtie w} + u \bowtie w - w \bowtie u = \text{RHS}$$

$$\hat{\underline{\delta}}_w(tu) = \left(2 + \alpha - p + t(1+\alpha)\,{}^t\underline{\varrho}/{}^t\varrho\right)\underbrace{w \bowtie u + u \bowtie w}$$

$$\text{LHS} = \tilde{\underline{\delta}}_w(u) + \left(1 + t^t\underline{\varrho}/{}^t\varrho\right)\underbrace{\hat{\gamma}(u) \bowtie u + u \bowtie \tilde{\gamma}(u)} = \left(1 - p + (1+\alpha)\left(1 + t^t\underline{\varrho}/{}^t\varrho\right)\right)\underbrace{w \bowtie u + u \bowtie w} = \text{RHS}$$