Proving the J properties

Continues 2012-2

March-17-13
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$$J_u(\lambda_0) := \int_0^1 ds\ \mathrm{div}_u(\lambda_0 \,/\!/\, RC_u^{s\lambda_0}) \,/\!/\, C_u^{-s\lambda_0}.$$ implies

1

$$J_u(\mathrm{bch}(\lambda_x, \lambda_y)) = J_u(\lambda_x) + J_u(\lambda_y \,/\!/\, RC_u^{\lambda_x}) \,/\!/\, C_u^{-\lambda_x},$$

and

$$J_w(\lambda_x \,/\!/\, tm_w^{uv}) \,/\!/\, RC_w^{\lambda_x /\!/ tm_w^{uv}} = J_u(\lambda_x) \,/\!/\, \underbrace{RC_u^{\lambda_x} \,/\!/\, RC_v^{\lambda_x /\!/ RC_u^{\lambda_x}} \,/\!/\, tm_w^{uv}}_{= tm_v^{uv} /\!/ RC_w^{\lambda_x /\!/ tm_w^{uv}}}$$

2

$$+ J_v(\lambda_x \,/\!/\, RC_u^{\lambda_x}) RC_v^{\lambda_x /\!/ RC_u^{\lambda_x}} \,/\!/\, tm_w^{uv}$$

$$e^{bch(\lambda_x, t\lambda_y)} = e^{\lambda_x} e^{t\lambda_y}$$

$$\frac{\partial}{\partial t}: \quad \cancel{e^{bch(\lambda_x, t\lambda_y)}} \left(\frac{e^{ad_{bch}} - 1}{ad_{bch}}\right)(\delta bch) \sim \cancel{e^{\lambda_x} e^{t\lambda_y}} \lambda_y$$

$$\frac{\delta bch}{\delta t} \sim \frac{ad_{bch}}{e^{ad_{bch}} - 1}(\lambda_y)$$

$$\frac{\delta J_u}{\delta \gamma} \sim \int_0^1 ds \left[\mathrm{div}_u(\delta\gamma \,/\!/\, RC_u^{s\gamma} + \right.$$

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