

$$f(x, y) = f(\varphi(t), \psi(t)) = F(t)$$

~~$$\int F(t) dt = \alpha(x, y) \int f(x, y) dx + \beta(x, y) \int f(x, y) dy$$~~

$$f(x, y) = g''_{xy}(x, y)$$

$$\int F(t) dt = \varphi'(t) \int f(x, y) dx + \psi'(t) \int f(x, y) dy$$

~~$$F(t) = g'(t)$$~~

$$\int F(t) dt = \alpha g'_y + \beta g'_x$$

$$F(t) = \alpha g''_{xy} \varphi'(t) + \alpha g''_{yy} \psi'(t) + \beta g''_{xx} \varphi'(t) + \beta g''_{xy} \psi'(t) +$$

$$+ \frac{\partial \alpha}{\partial x} \varphi'(t) g'_y + \frac{\partial \alpha}{\partial y} \psi'(t) g'_y + \frac{\partial \beta}{\partial x} \varphi'(t) g'_x + \frac{\partial \beta}{\partial y} \psi'(t) g'_x$$

$$f(x, y) = (\alpha \varphi' + \beta \psi') f(x, y) + \left(\alpha g''_{yy} + \frac{\partial \alpha}{\partial y} g'_y + \frac{\partial \beta}{\partial y} g'_x \right) \psi'(t) +$$

$$+ \left(\beta g''_{xx} + \frac{\partial \alpha}{\partial x} g'_y + \frac{\partial \beta}{\partial x} g'_x \right) \varphi'(t)$$

Disparitäten
Mit

$$\alpha \varphi' + \beta \psi' = 1$$

$$\begin{cases} \alpha g''_{yy} + \frac{\partial \alpha}{\partial y} g'_y + \frac{\partial \beta}{\partial y} g'_x = 0 \\ \beta g''_{xx} + \frac{\partial \alpha}{\partial x} g'_y + \frac{\partial \beta}{\partial x} g'_x = 0 \end{cases}$$

$$\alpha g'_y + \beta g'_x = G(x, y) = \Gamma(t)$$

$$\Gamma_1(t) = \alpha g'_y + \beta g'_x = \frac{1}{f} (G'_x g'_y + G'_y g'_x)$$

$$\begin{cases} \frac{\partial G}{\partial x} = \alpha f''_{xx} + \beta f''_{xy} + \frac{\partial \alpha}{\partial x} f'_x + \frac{\partial \beta}{\partial x} f'_y \\ \frac{\partial G}{\partial y} = \beta f''_{xy} + \frac{\partial \alpha}{\partial y} f'_x + \frac{\partial \beta}{\partial y} f'_y \end{cases}$$

$$\begin{cases} f(x, y) = g''_{xy}(x, y) & G'_x = \int f(x, y) dy \\ f(x, y) = F(t) & G'_y = \int f(x, y) dx \\ & G''_{xy} = f(x, y) \end{cases}$$

$$\Gamma'(t) = f(x, y)$$

$$F_1(t) = G(x, y)$$

$$f = G'_x \varphi' + G'_y \psi' = \Gamma$$

$$\alpha = \frac{1}{f} G'_x \quad \beta = \frac{1}{f} G'_y \quad F(t) = G'_x \varphi'(t) + G'_y \psi'(t)$$