Schreibweise $x = y \pm \varepsilon \Leftrightarrow y-\varepsilon \leq x \leq y+\varepsilon$

geg. $\varepsilon > 0$ ex. $\delta > 0$: $|\Delta x| < \delta \Rightarrow$

$$\frac{1}{\Delta x}\left(\int_a^b f(p+\Delta x,t)\,dt - \int_a^b f(p,t)\,dt\right)$$

$$\int_a^b \left(f(p+\Delta x,t) - f(p,t)\right) dt$$

$$\Delta x\left(\frac{\partial f}{\partial x}(p+\xi_{\Delta x},t)\right)$$

Mittelwert

$$\frac{\partial f}{\partial x}(p,t) \pm \varepsilon$$

$\partial f/\partial x$ glm. stetig

$$= \frac{1}{\Delta x}\int_a^b \Delta x\left(\frac{\partial f}{\partial x}(p,t) \pm \varepsilon\right) dt$$

$$= \int_a^b \left(\frac{\partial f}{\partial x}(p,t) \pm \varepsilon\right) dt$$

$$= \int_a^b \frac{\partial f}{\partial x}(p,t)\,dt \pm \varepsilon(b-a)$$