

(ii) - EGONKORTASUNERAKO BALDINTZEN ONDORIOZTAPEN **KVANTITATIBOA** (**S ADIERAZPENA**)

$$S(u+\Delta u, v+\Delta v, N) + S(u-\Delta u, v-\Delta v, N) \leq 2S(u, v, N)$$

$$S(u+\Delta u, v+\Delta v, N) + S(u-\Delta u, v-\Delta v, N) - 2S(u, v, N) \leq 0$$

$$S(u+\Delta u, v+\Delta v, N) = S(u, v, N) +$$

$$\left[ \left( \frac{\partial S}{\partial u} \right)_{u,v,N} \Delta u + \left( \frac{\partial S}{\partial v} \right)_{u,v,N} \Delta v \right] +$$

+

$$\frac{1}{2!} \left[ \left( \frac{\partial^2 S}{\partial u^2} \right) \Delta u^2 + \left( \frac{\partial^2 S}{\partial v^2} \right) \Delta v^2 + \frac{\partial}{\partial v} \left( \frac{\partial S}{\partial u} \right) \Delta u \Delta v + \frac{\partial}{\partial u} \left( \frac{\partial S}{\partial v} \right) \Delta u \Delta v \right]$$

+ ... TAYLOR GARAPENENKO GAINONTZEKO ORDENAK

$$S(u-\Delta u, v-\Delta v, N) = S(u, v, N) +$$

$$\left[ \left( \frac{\partial S}{\partial u} \right)_{u,v,N} (-\Delta u) + \left( \frac{\partial S}{\partial v} \right)_{u,v,N} (-\Delta v) \right] +$$

$$\frac{1}{2!} \left[ \left( \frac{\partial^2 S}{\partial u^2} \right) \Delta u^2 + \left( \frac{\partial^2 S}{\partial v^2} \right) \Delta v^2 + \frac{\partial}{\partial v} \left( \frac{\partial S}{\partial u} \right) \Delta u \Delta v + \frac{\partial}{\partial u} \left( \frac{\partial S}{\partial v} \right) \Delta u \Delta v \right]$$

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$$\left( \frac{\partial^2 S}{\partial u^2} \right) (\Delta u)^2 + \left( \frac{\partial^2 S}{\partial v^2} \right) (\Delta v)^2 + 2 \left( \frac{\partial^2 S}{\partial u \partial v} \right) \Delta u \Delta v \leq 0$$

→ BALIOKIDEAK !!

$$S_{uu}(\Delta u)^2 + S_{vv}(\Delta v)^2 + 2S_{uv}\Delta u\Delta v \leq 0$$

$$S_{uu} \{ S_{uu}(\Delta u)^2 + 2S_{uv}\Delta u\Delta v + S_{vv}(\Delta v)^2 \} \geq 0$$

$\Delta$   
0

(1)

$$S_{uu}S_{vv} - S_{uv}^2 \geq 0 \quad (2)$$

ONDORIOAK !!

INTERPRETATZIOA!  
(INHOMOGENEOTASUNA)