

then can apply L. 11.2.10

with f to $f \in C^2(T)$

as then $h = (f(t) - u, \dots)$

$$(f(t) - u, \det \nabla f(t)) \geq \frac{\epsilon}{2} \quad \square$$

(if are taking $\nabla f(t), \nabla^2 f(t)$ then need f to be C^3 !)

Applying

L. 11.2.10 to

with $h: \mathbb{R}^n \rightarrow \mathbb{R}^{n+k}$
 $k > 0$ still okay!

$$h = (f(t) - u, g(t))$$