http://users/iekeland/web/welcome.html
´eéå

$\dot{x}{=}JH'(t,x)$
$x(0){=}x(T)$

$H(t,\cdot)$
x
$+\infty$
$\|x\| \to$
∞
$H(x)$
C^1
(A_∞, B_∞)
H
$(0, b_\infty)$
H
(A_∞, B_∞)
A_∞
B_∞
$B_\infty -$
A_∞

$$\gamma := smallesteigenvalueof B_\infty - A_\infty \qquad (1)$$

$$\lambda := largestnegativeeigenvalueof J\frac{d}{dt} + A_\infty \qquad (2)$$

??
$\lambda +$
$\gamma <$
0
$\dot{x}{=}JH'(x)$
$x(0){=}x(T)$
(3)
$\overline{x}$

$$\psi(u) = \int_o^T \left[\frac{1}{2}\left(\Lambda_o^{-1}u, u\right) + N^*(-u)\right] dt$$

(4)
Λ
$R(\Lambda)^2_L$

$$N(x) := H(x) - \frac{1}{2}\left(A_\infty x, x\right)$$

(5)

$$N(x) \leq \frac{1}{2}\left(\left(B_\infty - A_\infty\right)x, x\right) + c \forall x.$$

(6)
$H'(0) =$
0
$H(0) =$
0

$$\delta := \liminf_{x \to 0} 2N(x)\left\|x\right\|^{-2}.$$

(7)
$\gamma <$
$-\lambda <$
δ
u
$\overline{x}(t) \neq 0 \forall t.$
(8)
??
$\delta' >$
δ
$\varepsilon >$
0

$$\|x\| \leq \varepsilon \Rightarrow N(x) \leq \frac{\delta'}{2}\left\|x\right\|^2.$$

(9)
$\eta >$
0

$$f\left\|x\right\| \leq \eta \Rightarrow N^*(y) \leq \frac{1}{2\delta'}\left\|y\right\|^2.$$

(10)

u_1
$\|hu_1\|_\infty \leq$
η
h
??

$$\psi(hu_1) \leq \frac{h^2}{\ }\frac{1}{\ }\left\|u_1\right\|^2 + \frac{h^2}{\ }\frac{1}{\ }\left\|u_1\right\|^2$$

$$\frac{T}{2\pi}b_\infty < -E\left[-\frac{T}{2\pi}a_\infty\right] < \frac{T}{2\pi}\omega$$

(14)

ψ
T
x
$E[\alpha]$
$\alpha \in$
$a \in$
$a \leq$
$\alpha \leq$
$a+$
1
$a_\infty =$
0
x

$$\frac{T}{2\pi}b_\infty < 1 < \frac{T}{2\pi}$$

(15)

$$T \in \left(\frac{2\pi}{\omega}, \frac{2\pi}{b_\infty}\right).$$

(16)

Λ
$\frac{2\pi}{T}+$
a_∞
λ
$\frac{2\pi}{T}k_o+$
a_∞

$$\frac{2\pi}{T}k_o+a_\infty < 0 \leq \frac{2\pi}{T}(k_o+1)+a_\infty.$$

(17)

$$k_o = E\left[-\frac{T}{2\pi}a_\infty\right].$$

(18)

$\gamma <$
$-\lambda <$
δ

$$b_\infty - a_\infty < -\frac{2\pi}{T}k_o - a_\infty < \omega - a_\infty$$

(19)

??
H
C^2
$_{2n}\setminus$
$\{0\}$
$H''(x)$
$x \neq$
0
x
ψ
T
x
$x+$
ξ
$\xi \in^{2n}$
T

$$\dot{x} = JH'(x).$$

(20)

$\xi =$
0
$\psi(x) \geq$
$\psi(\widetilde{x})$
$\widetilde{x}$
x
$W^{1,2}\left(/T;^{2n}\right)$
$i_T(\widetilde{x})$
T
x
$(0,T)$

$$i_T(\widetilde{x}) = 0.$$

(21)

$\widetilde{x}$
T/k

$$i_T(\widetilde{x}) = i_{kT/k}(\widetilde{x}) \geq k i_{T/k}(\widetilde{x})+k-1 \geq k-1 \geq 1.$$

(22)

??
?
??
x_T
$T \in$
$\left(2\pi\omega^{-1}, 2\pi b_\infty^{-1}\right)$
$x_T(0) =$
$x_T(T)$
x_T
$T \rightarrow$
$2\pi\omega^{-1}$

α
f
$+$
2