

①

Philosophy

Oct. 2, 2008

added 2008. goes between 1st
+ 2nd lectures. (or maybe first?).

General procedure in class

experimental observation + (bio)physics \rightarrow equations \rightarrow solution
 \Rightarrow reproduce exp. observations

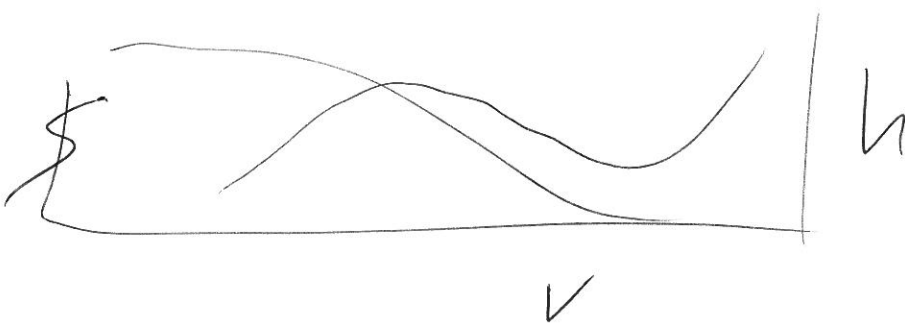
- leads to deeper understanding
- but that's not the real goal
we actually want to close the loop +
make experimental predictions.
- this ~~is~~ step is hard, + success
stories are more rare than they should
be.
- I'll try to point out some...

②

actual nullclines we consider:

$$T \frac{dv}{dt} = - (v - \xi_c) - \bar{p}_{Na} m_{\infty}^3(v) h (v - \xi_{Na})$$

$$T_h \dot{h} = h_{\infty}(v) - h$$



← this one
fixes

2-D stability

N-D stability: same

example: next page

③

$$\underline{A} = \begin{pmatrix} 2 & 2 \\ -3 & -1 \end{pmatrix}$$

$$T = -3$$

$$\Delta = -10 + 6 = -4$$

$$\lambda = \frac{-3 \pm \sqrt{9 + 11}}{2} = \frac{-3 \pm \sqrt{20}}{2} = -4, 1$$

v_1 v_2

$\lambda=1$ $\lambda=-4$

~~eigen~~ eigen: $\begin{pmatrix} 2 \\ -1 \end{pmatrix}$ $\begin{pmatrix} 1 \\ -3 \end{pmatrix}$

adjoint: $\begin{pmatrix} 3 & 1 \\ 5 & -1 \end{pmatrix}$, $\begin{pmatrix} 1 & 2 \\ -1 & -1 \end{pmatrix}$

