

before trying that pinpoint-specific-noise,
recall all parameters:

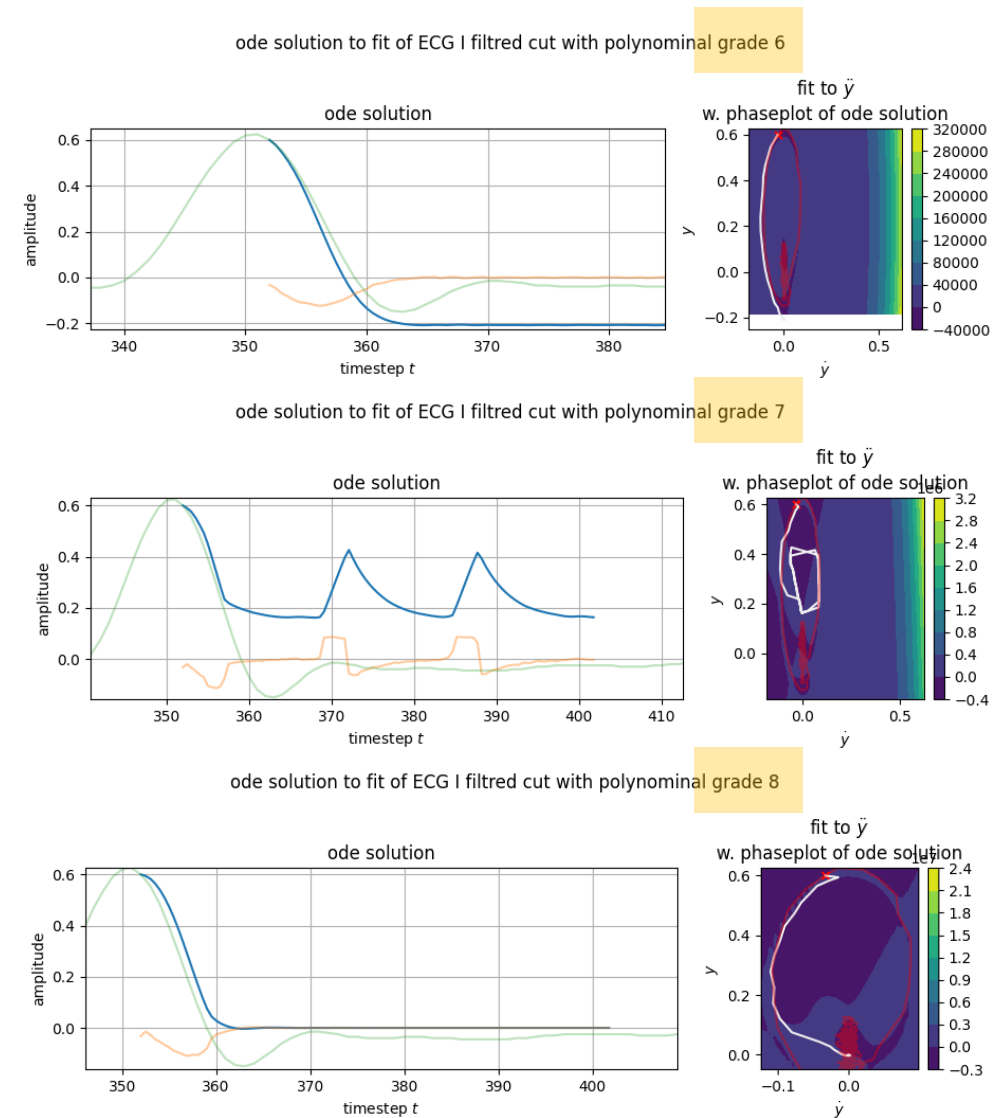
$$\begin{array}{l} \omega = 1.1 \text{ Hz} \\ \sigma = \sqrt{2\gamma} \\ \tilde{\sigma} = \sigma^2 \\ N_f = ? \end{array} \quad \begin{array}{l} \text{correct!} \\ \text{but this one?} \end{array}$$

$$\dot{x} = v$$

$$\dot{v} = -\left(\omega_0^2 + \sigma\Gamma(t; \sigma^2)\right)x + f(x, v; \vec{p})$$

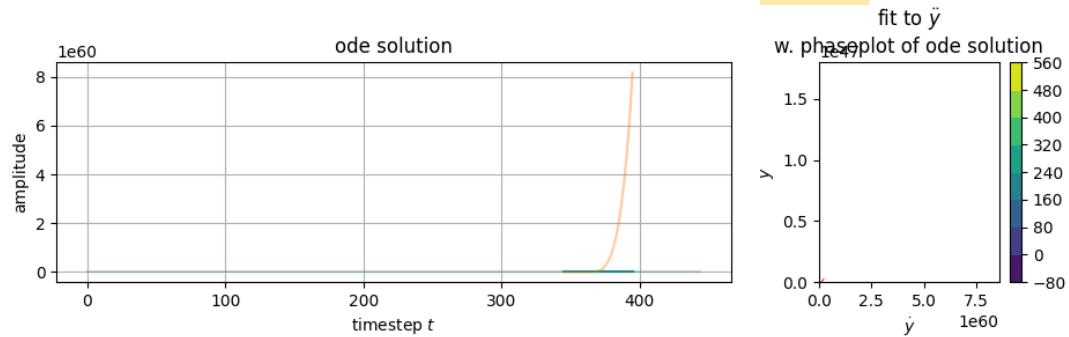
$$f(x, v; \vec{p}) = \underbrace{p_0v + p_1x^2 + p_2xv + p_3v^2 + \dots}_{N_f}$$

same parameters but different results:

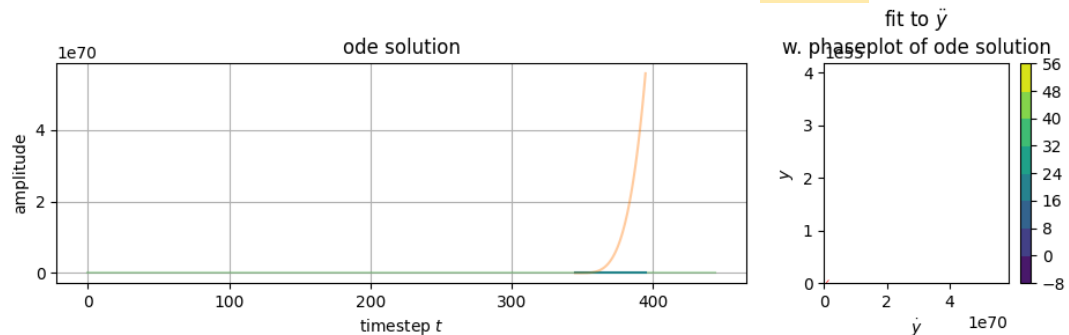


some N_f won't work.

ode solution to fit of ECG I filtered cut with polynomial grade 4



ode solution to fit of ECG I filtered cut with polynomial grade 3



for $N_f \leq 4$ the ODE solution would diverge.

looking at HO and VdP

$$\dot{x} = v$$

$$\dot{v} = -x$$

➔ grade 2

$$\dot{x} = v$$

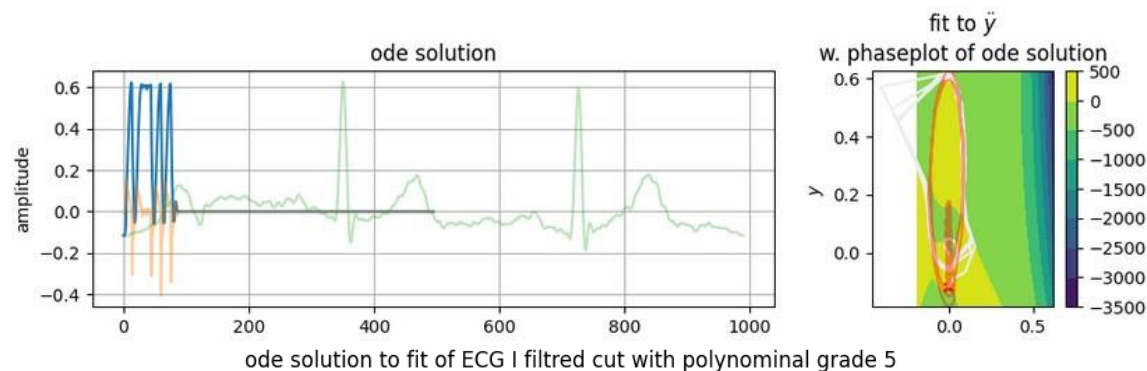
$$\dot{v} = \mu(1 - x^2)v - \omega^2 x$$

➔ grade 3

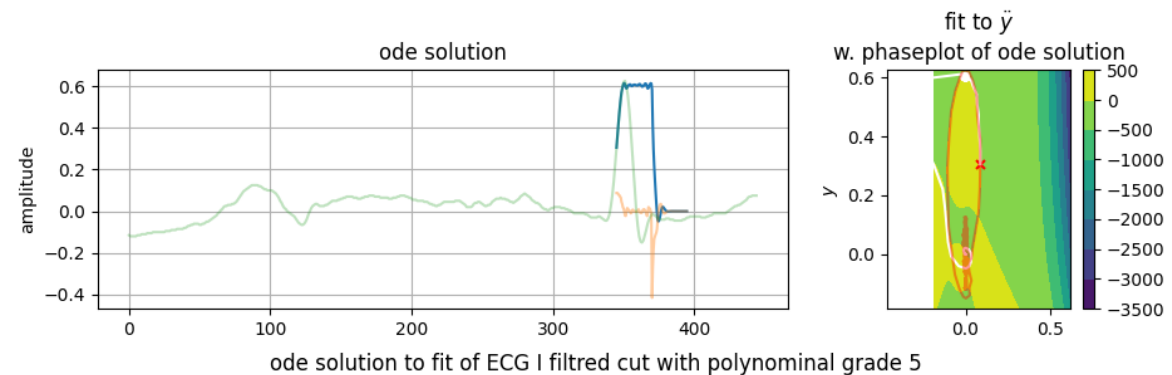
using grades 2, 3 the ODE solution would run into infinity

for $N_f \geq 5$ it works:

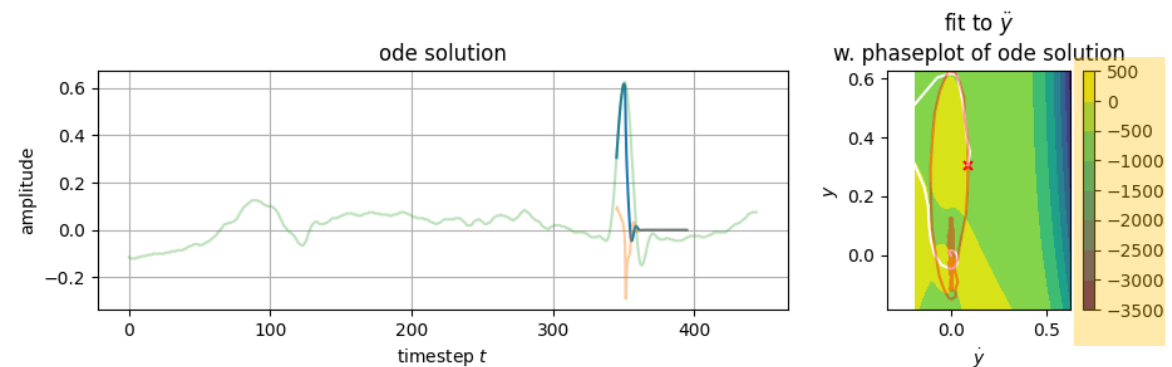
ode solution to fit of ECG I filtered cut with polynomial grade 5



ode solution to fit of ECG I filtered cut with polynomial grade 5

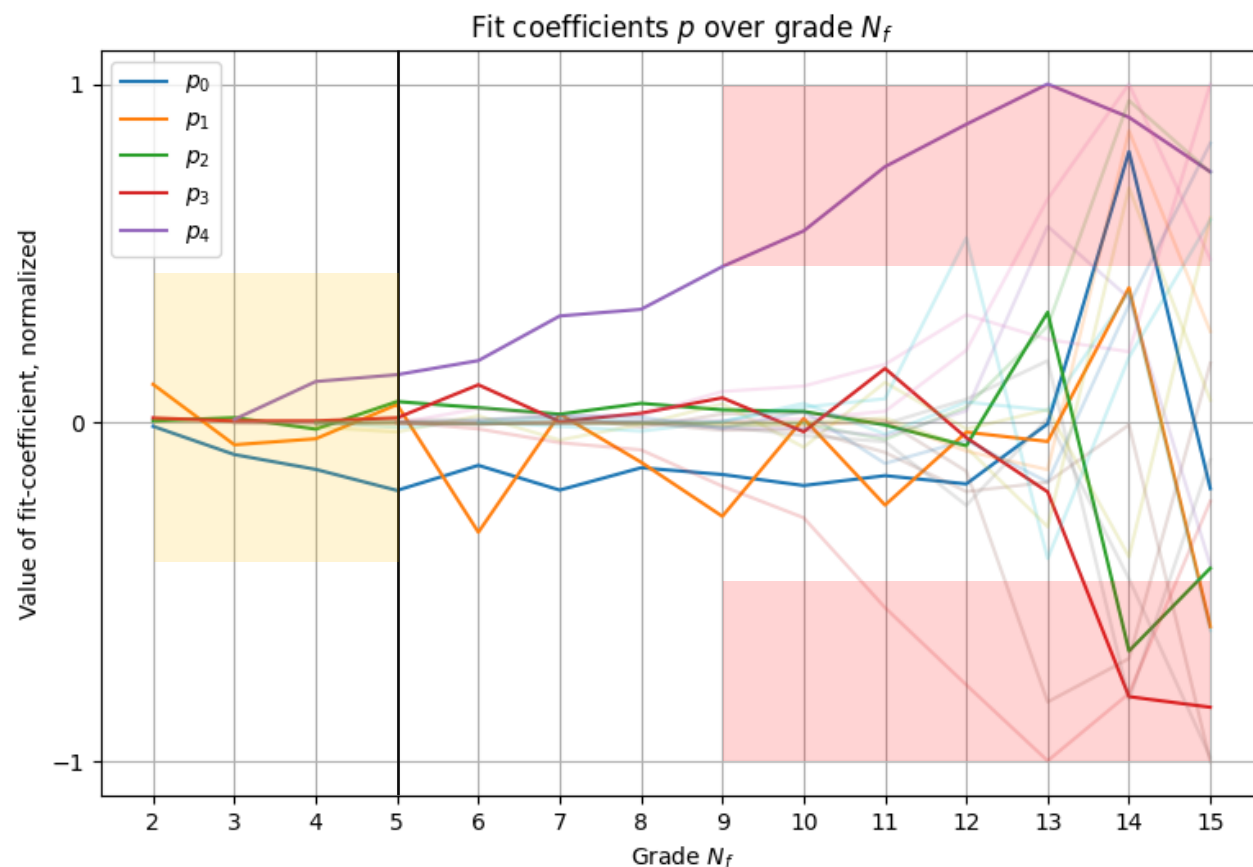


ode solution to fit of ECG I filtered cut with polynomial grade 5



lets view the fit-coefficients \vec{p}
and how they change with changing grade

$$f(x, v; \vec{p}) = p_0 v + p_1 x^2 + p_2 x v + p_3 v^2 + \dots$$



they get really large

what grade?