

Feature selection in models described by ODEs or PDEs

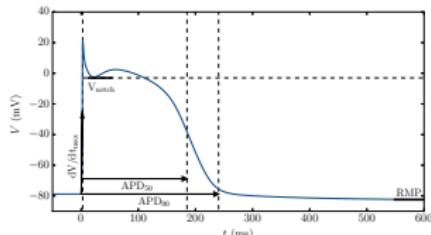
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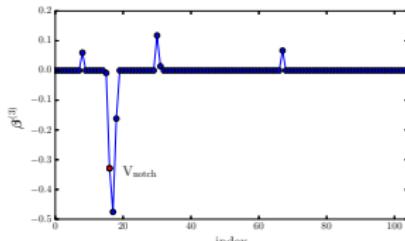
- Features **maximally correlated** with parameter of interest, minimally correlated with all the others
- Use: monitoring QoI, parameter estimation
- Given **dictionary** of features:

$$\mathcal{D} = \{\text{"common" features, derivatives, integrals, PCA coefficients, ...}\}$$

- Weights on dictionary entries solution of **sparse** optimization problem
- Leads to easier parameter estimation problems
- Applications: electrophysiology, cardiovascular measurements



Cardiac action potential common features



Weights on dictionary entries