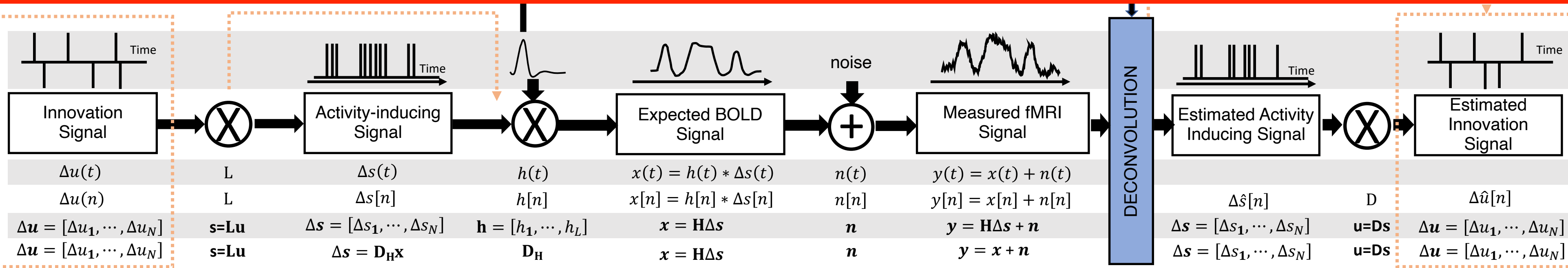
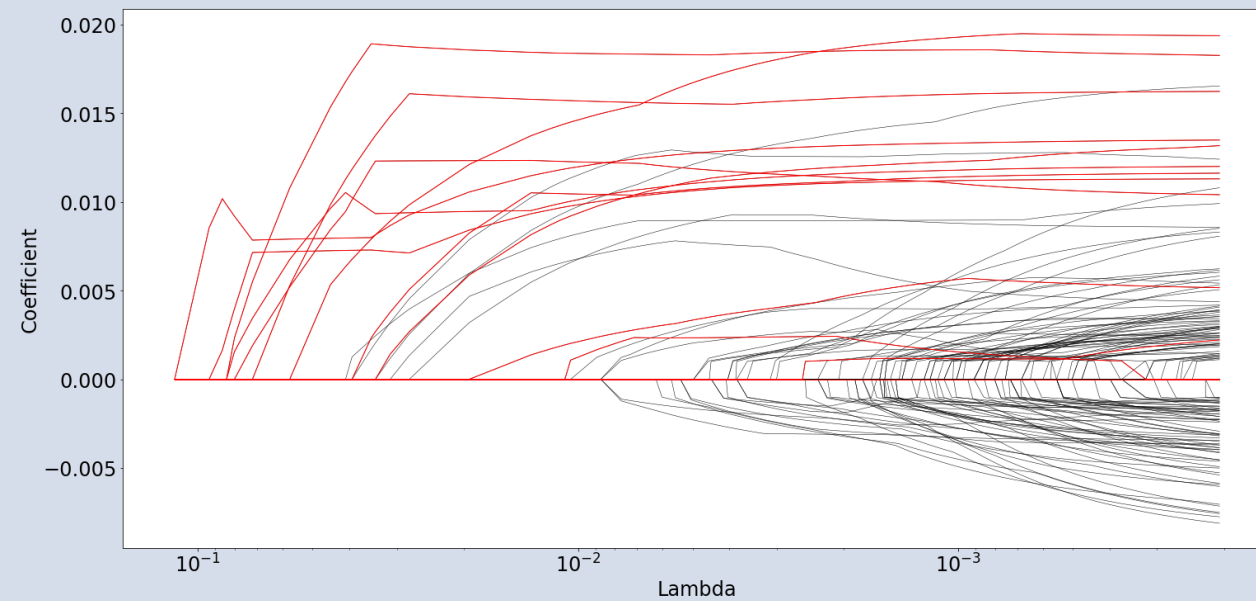


PFM
TA



Least Angle Regression (LARS)

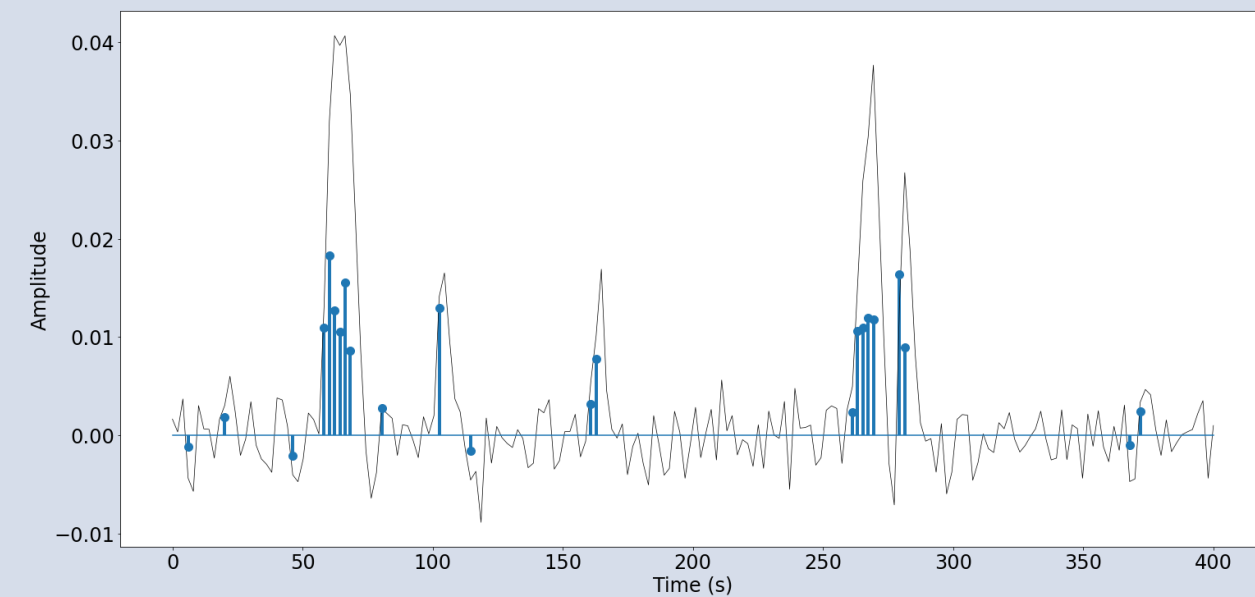
1. Start with all coefficients \mathbf{s} equal to zero.
2. Find the predictor x most correlated with \mathbf{y} .
3. Increase the coefficient s_j in the direction of the sign of its correlation with \mathbf{y} . Take residuals $r = \mathbf{y} - \hat{\mathbf{y}}$ along the way. Stop when some other predictor x_k has as much correlation with r as x_j has.
4. Increase (s_j, s_k) in their joint least-squares direction, until some other predictor x_m has as much correlation with the residual r .
5. Increase (s_j, s_k, s_m) in their joint least-squares direction, until some other predictor x_n has as much correlation with the residual r .
6. Continue until all predictors are in the model.



Fast Iterative Shrinkage-Thresholding Algorithm (FISTA)

Inputs: λ, L, \mathbf{M} (measurements), $t_0 = 1$
Output: \mathbf{x}
Until convergence do:

- 1 $x_{k-1} = x_k$
- 2 $z_k = f(y_k, \mathbf{M})$
- 3 $x_k = \text{prox}_{L, \lambda, \Omega}(z_k)$
- 4 $t_{k+1} = \frac{1 + \sqrt{1 + 4t_k^2}}{2}$
- 5 $y_{k+1} = x_k + \left(\frac{t_k - 1}{t_{k+1}}\right)(x_k - x_{k-1})$



DECONVOLUTION