fitFilter2Data: Reports from self-test

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Contents

This document runs tests for fitFilter2Data. Run the tests and generate a report (this document) using

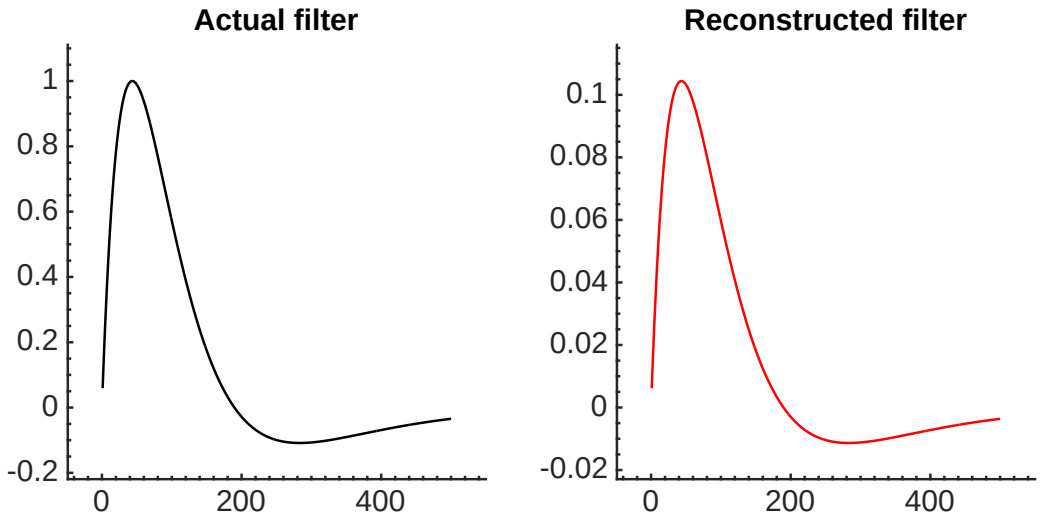
```
makePDF('tests.m')
```

You can run these tests with the debug_mode set to "true" in the preferences file (pref.m) to see more of the inner working of this toolbox in each test.

1. White Noise Inputs, No Noise

In this section, we test the simplest possible case: white noise inputs, no additional noise, with a bilobed filter. This test passes if the backed out filter (red) and the actual filter (black) match perfectly (shapewise).

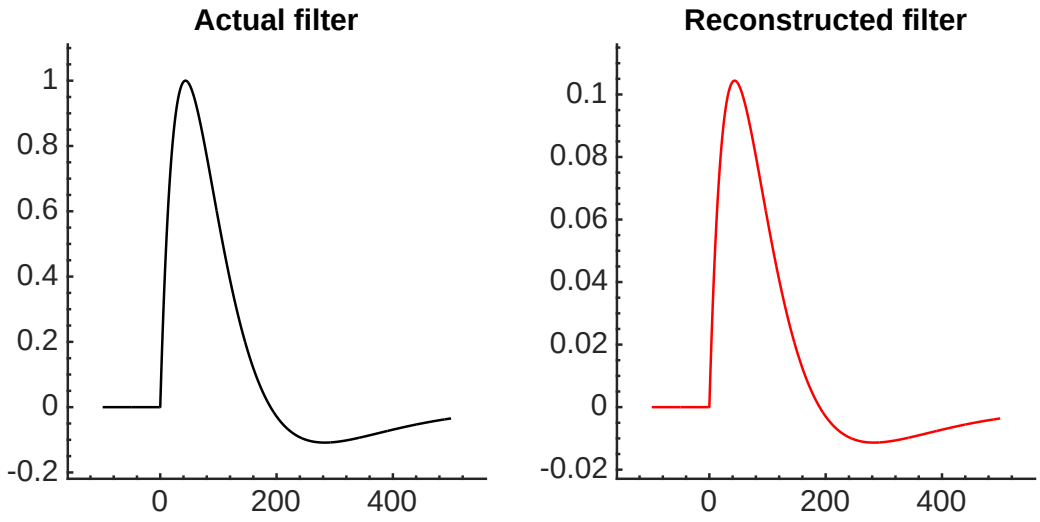
```
test 1 passed
```



2. Offset

We now want to backout a filter allowing for some offset, as we want to mimic a case where there is an unknown lag in the signal we feed to the filter estimation routines.

```
test 2 passed
```

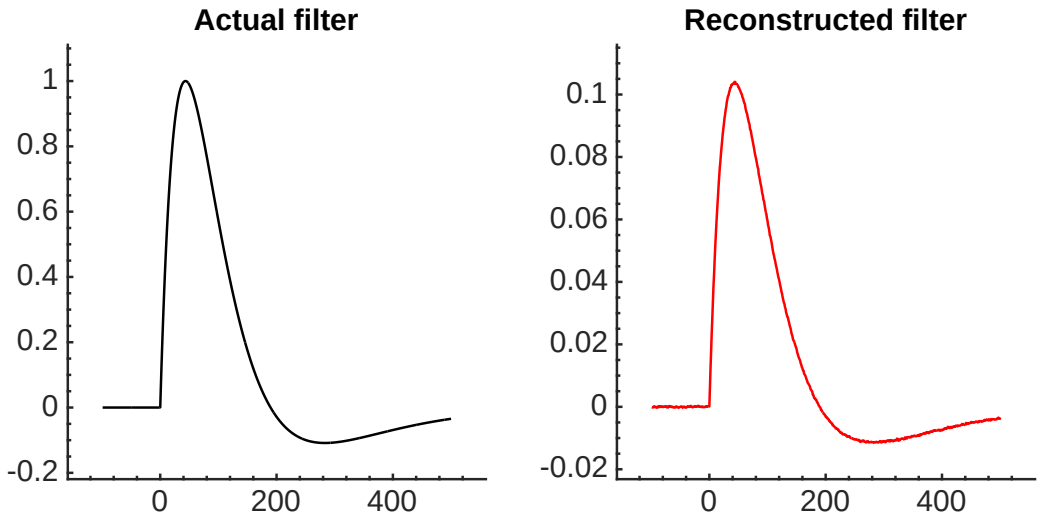


3. Only Some Points

We now want to back out the filter, using only data from only some time points. These time points can be arbitrarily picked from the data, and there is no requirement for continuity of any sort. The purpose of this test is to make sure that filter extraction works when we force it to work only with an arbitrary subset of the data.

To prevent fitFilter2Data from using some points in time, simply set the response at those times to NaN. fitFilter2Data will ignore them.

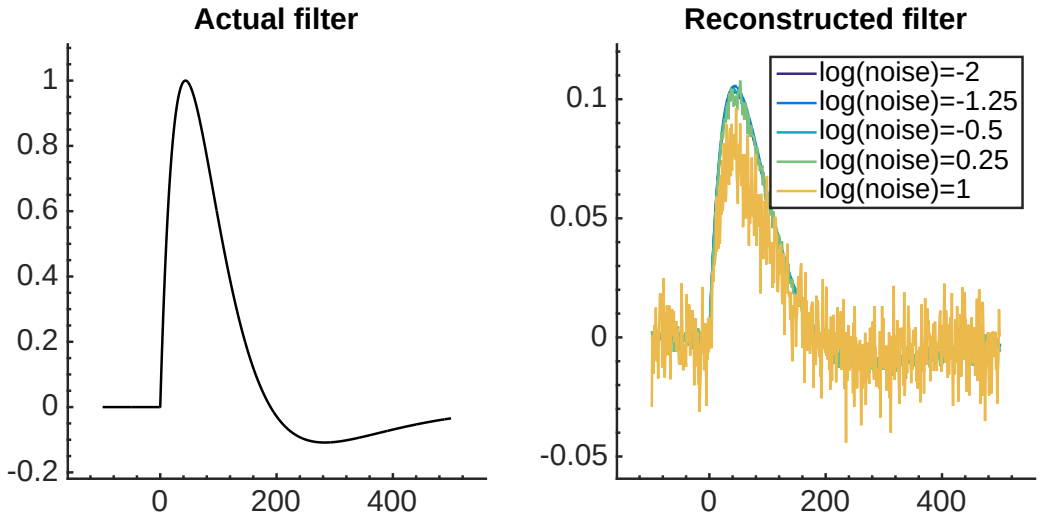
```
test 3 passed
```



4. Only Some Points, Offset, Additive Noise

Now, we repeat the same test, but add some Gaussian noise to the output before backing out the filter.

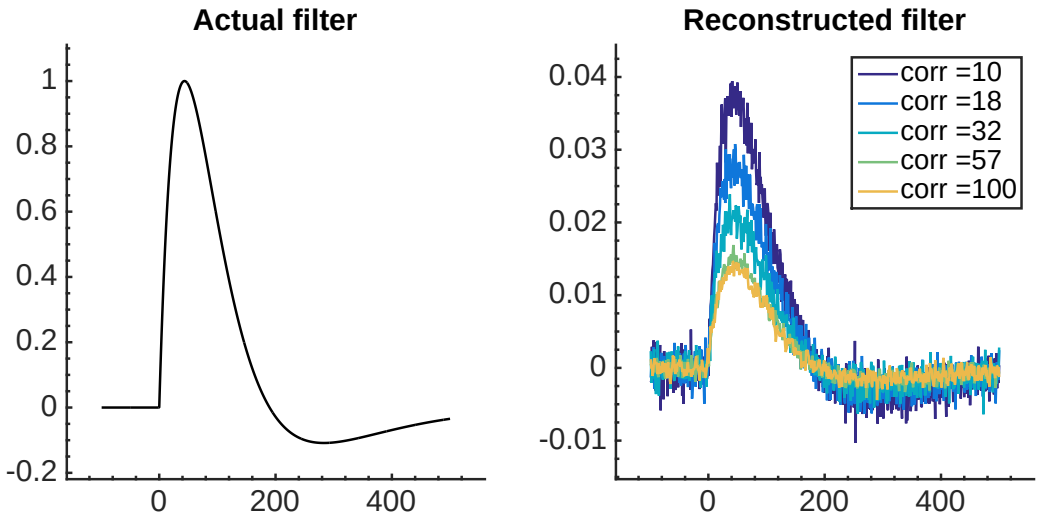
```
test 4 passed
```



5. Only Some Points, Offset, Additive Noise, Correlated Inputs

Now, we repeat the tests as before, but introduce correlations into the input.

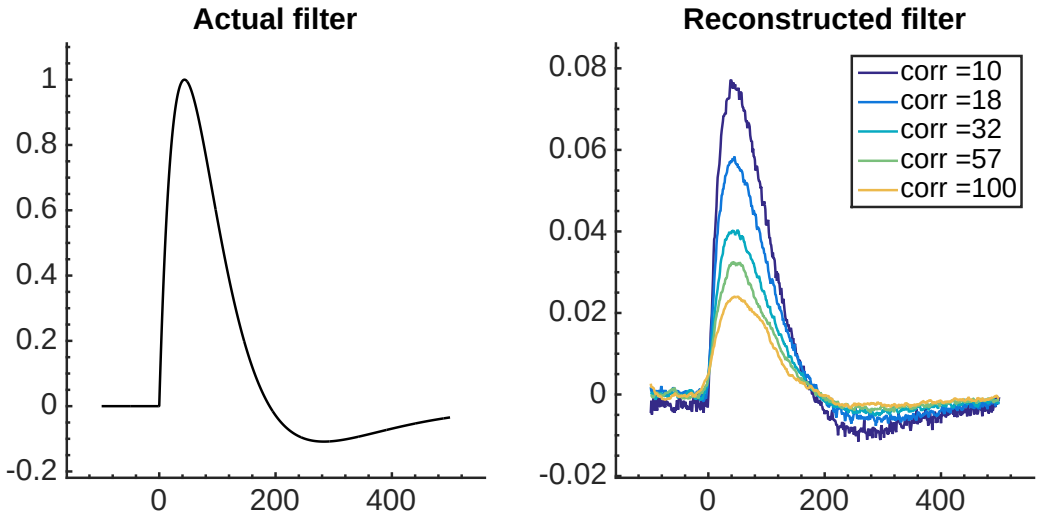
```
test 5 passed
```



6. Only Some Points, Offset, Additive Noise, Correlated Inputs, fixed regularisation

Now, we repeat the tests as before, with introduce correlations into the input, but force a fixed regularisation (here, equal to the mean of the eigenvalue of the covariance matrix of the input)

```
test 6 passed
```



Version Info

The file that generated this document is called:

```
tests
```

and its md5 hash is:

```
4a5d53a27cbf55eef1053c3acfc753a3
```

This file should be in this commit:

```
289449c0796e7fa094e1644d58cb76c4013e0f0b
```

This document was built in:

```
24.44 seconds.
```