Some Results

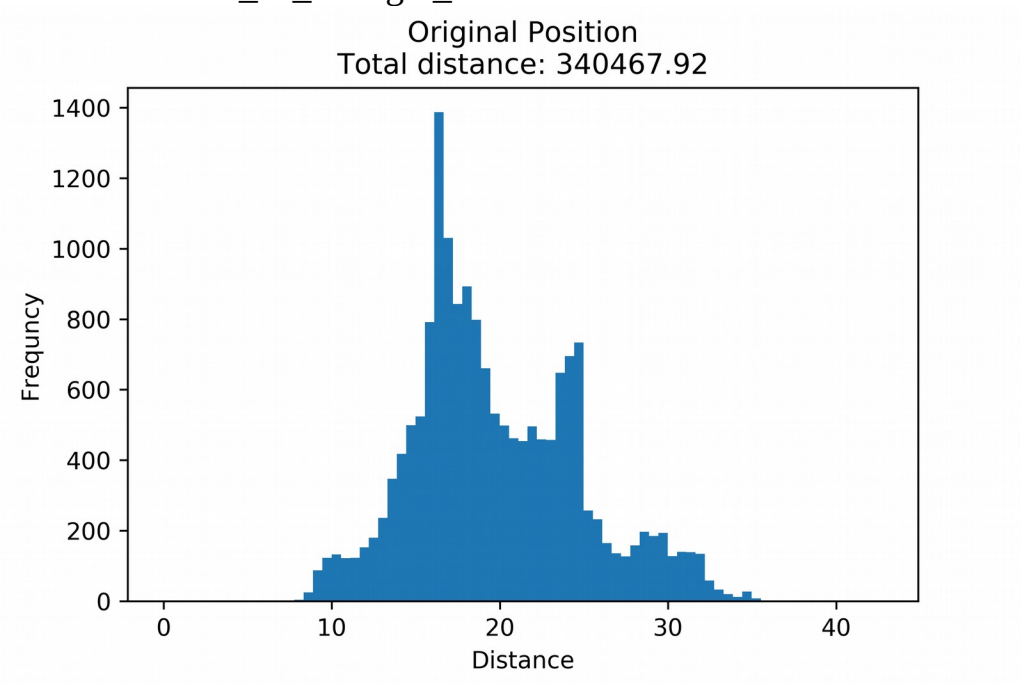
We solve the equation Ax=b by lsqr, it consist of two parts:

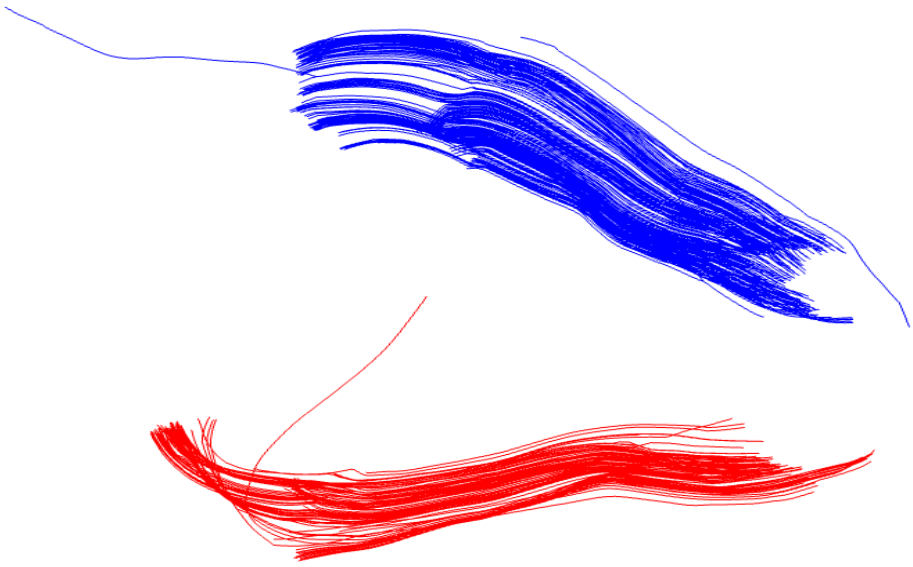
1. Distance part which is summation of all distances between each point and the closest point with respect to distance threshold
   $E_d(X)=\|W(DX-U)\|_F^2$
2. Stiffness part which is
   $E_s(X)=a\|(M\otimes G)\|_F^2$

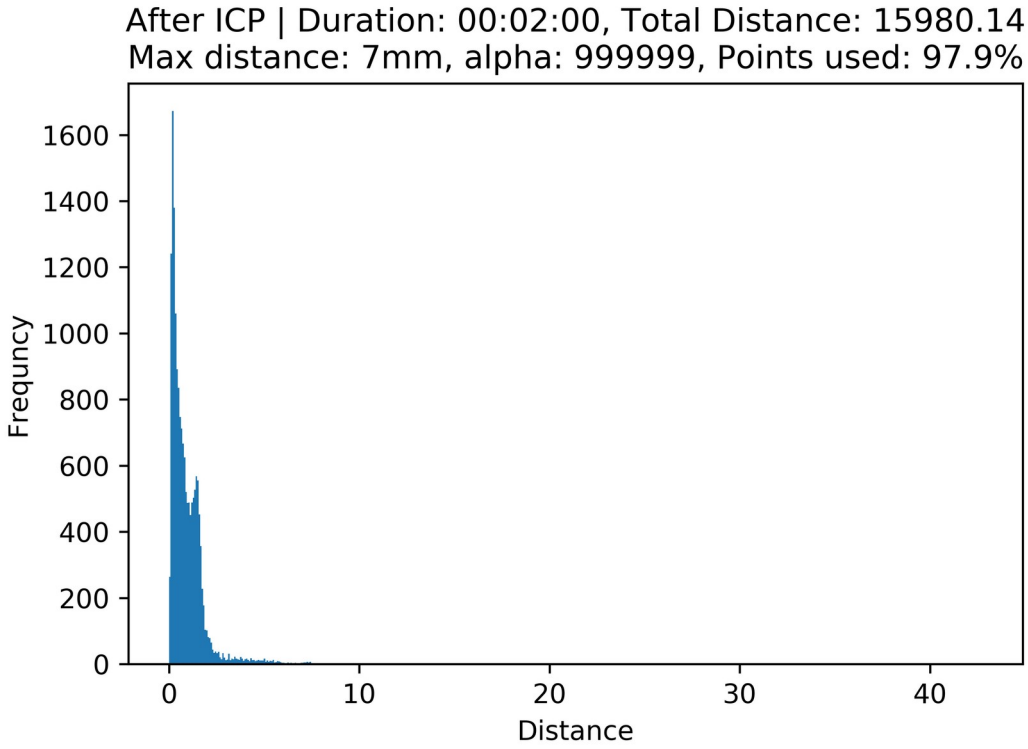
Comparison:

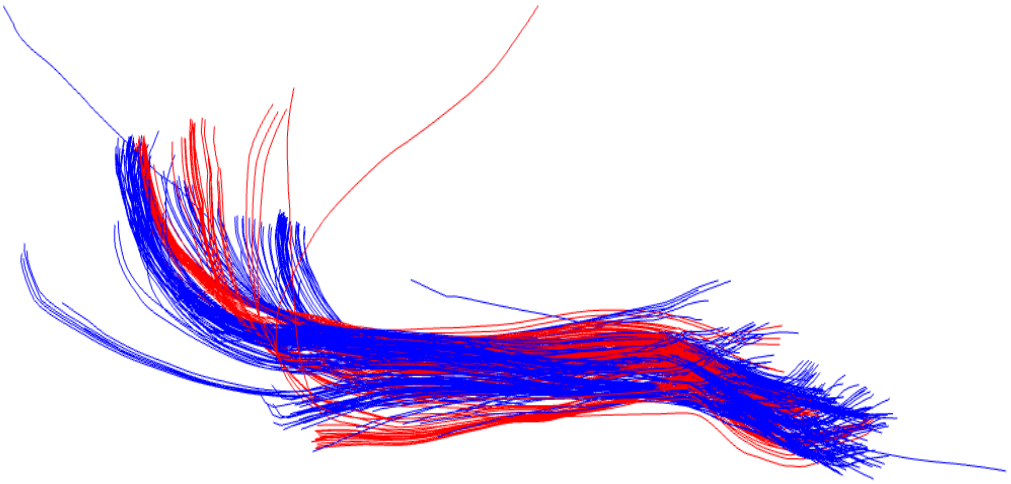
moving part = 197348/m_ex_atr-left_shore

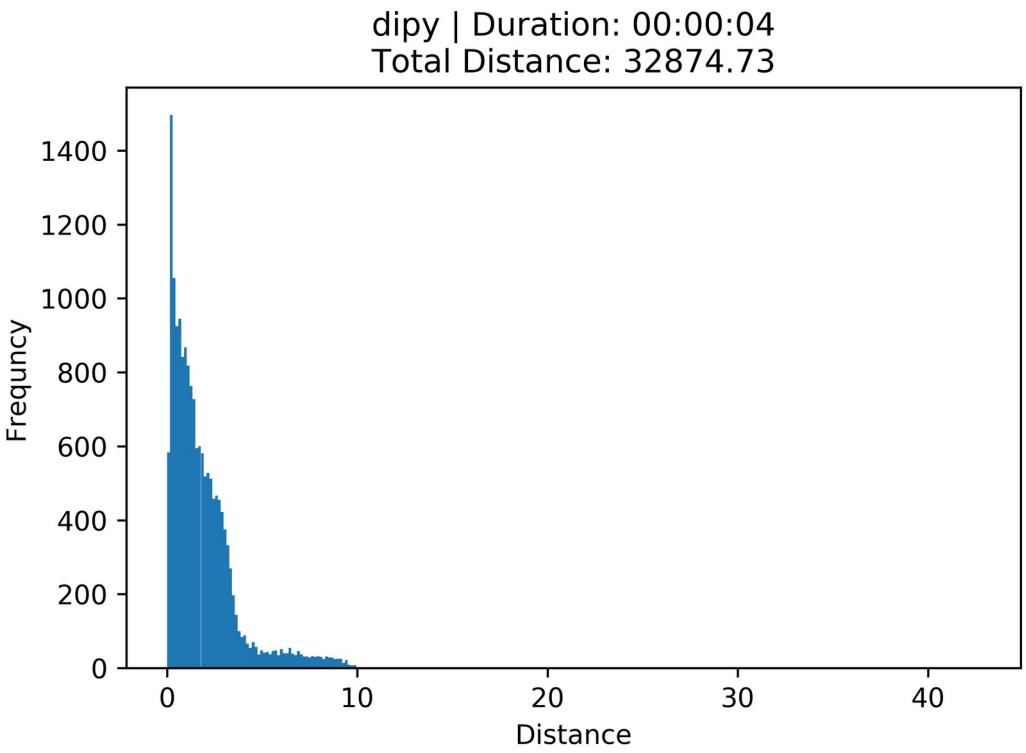
static part = 197348/m_ex_atr-right_shore

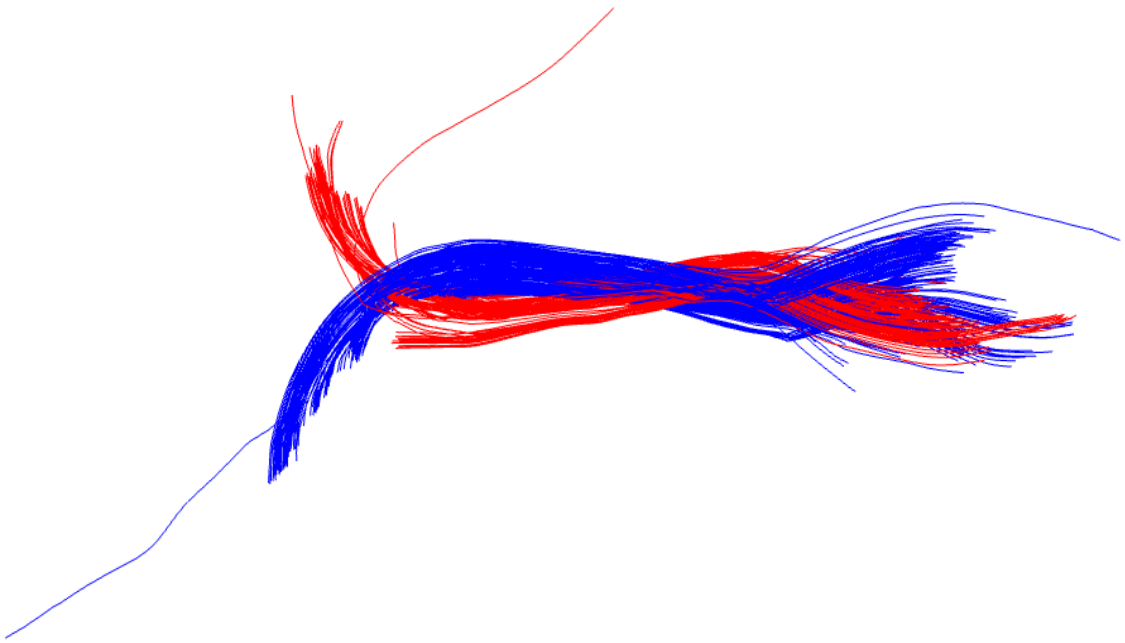


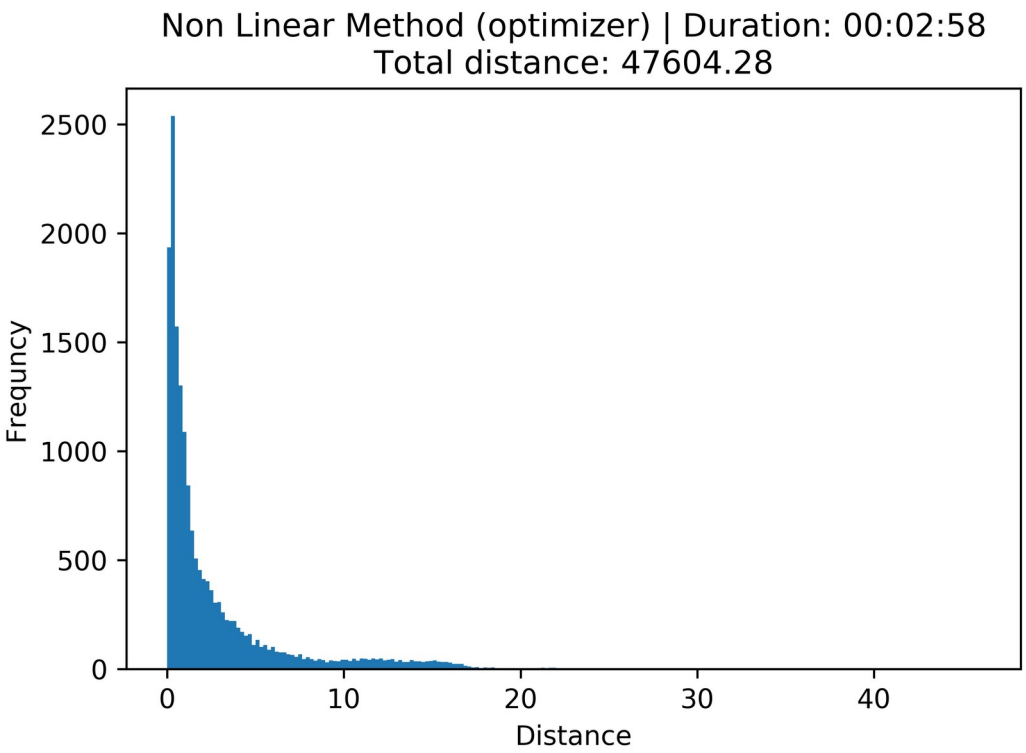



After ICP | Duration: 00:02:00, Total Distance: 15980.14
Max distance: 7mm, alpha: 999999, Points used: 97.9%
Frequncy
1600
1400
1200
1000
800
600
400
200
0
0
10
20
30
40
Distance




dipy | Duration: 00:00:04
Total Distance: 32874.73
Frequncy
1400
1200
1000
800
600
400
200
0
0
10
20
30
40
Distance




Non Linear Method (optimizer) | Duration: 00:02:58
Total distance: 47604.28
Frequncy
2500
2000
1500
1000
500
0
0
10
20
30
40
Distance