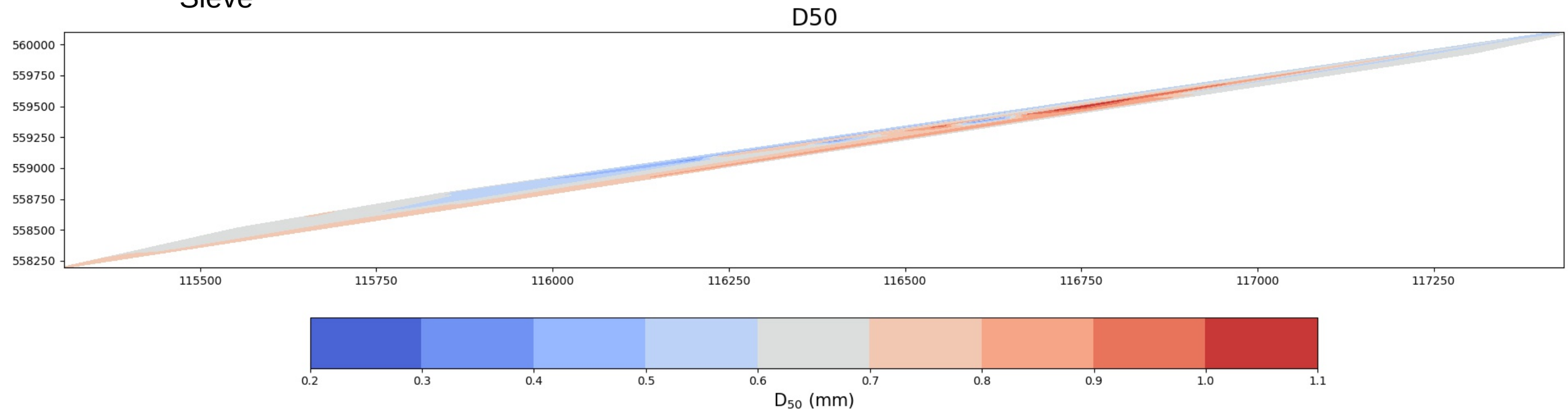
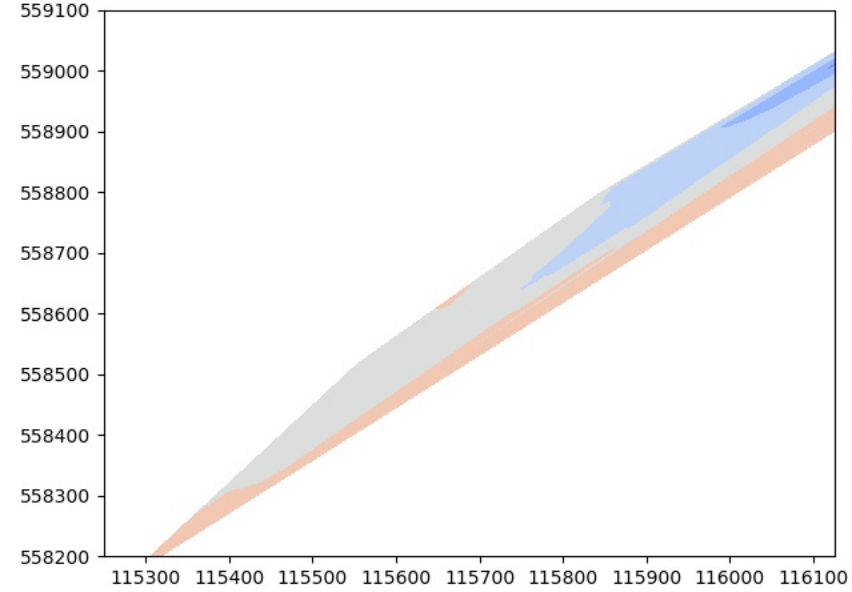
Sieve


D50
560000
559750
559500
559250
559000
558750
558500
558250
115500
115750
116000
116250
116500
116750
117000
117250
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
1.1
D50 (mm)


559100
559000
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558800
558700
558600
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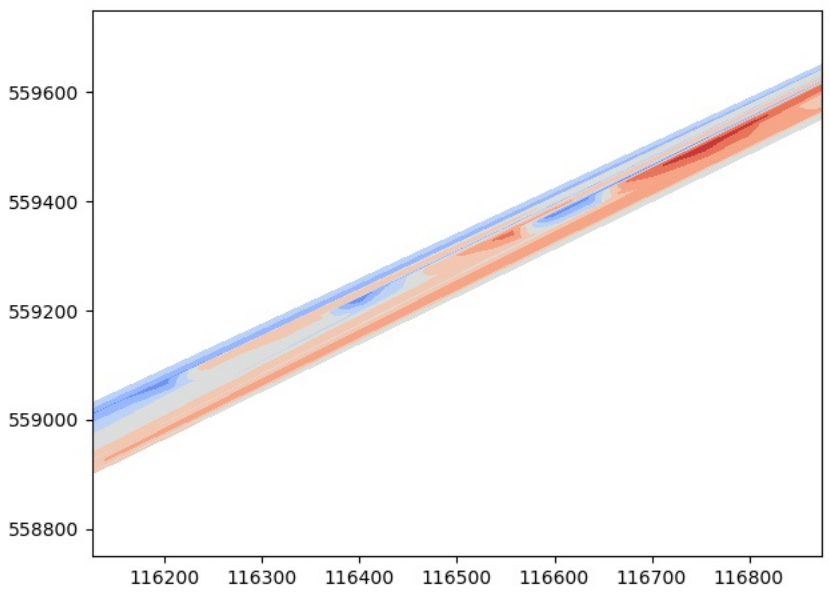
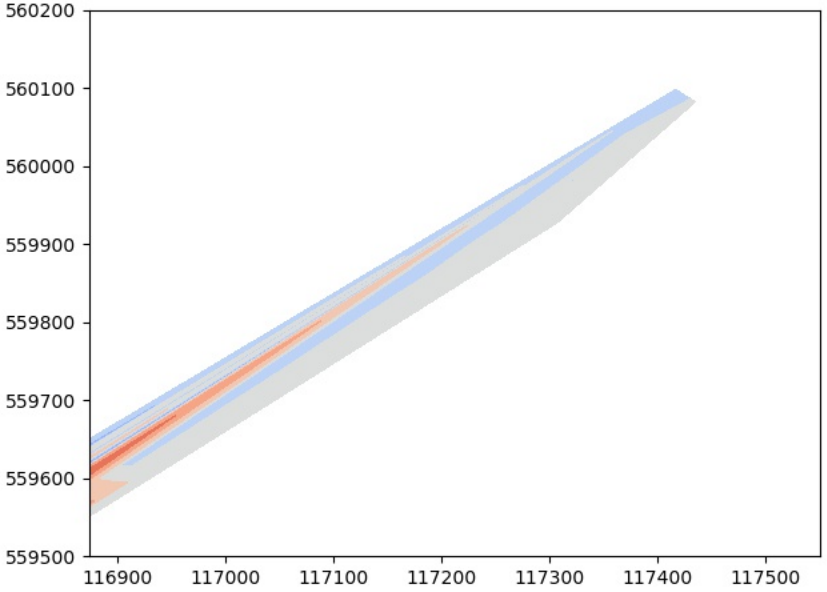
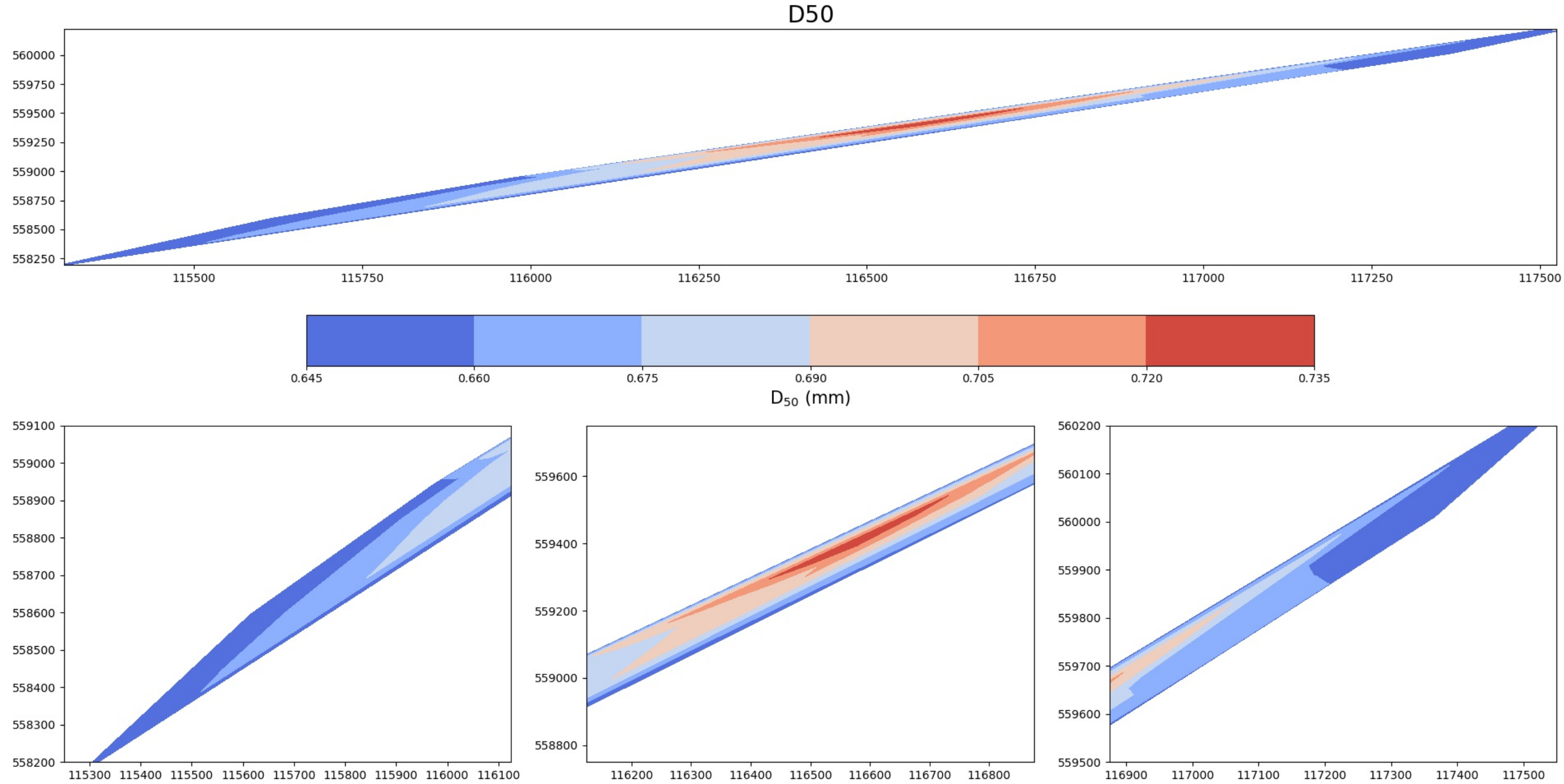
558200
115300
115400
115500
115600
115700
115800
115900
116000
116100

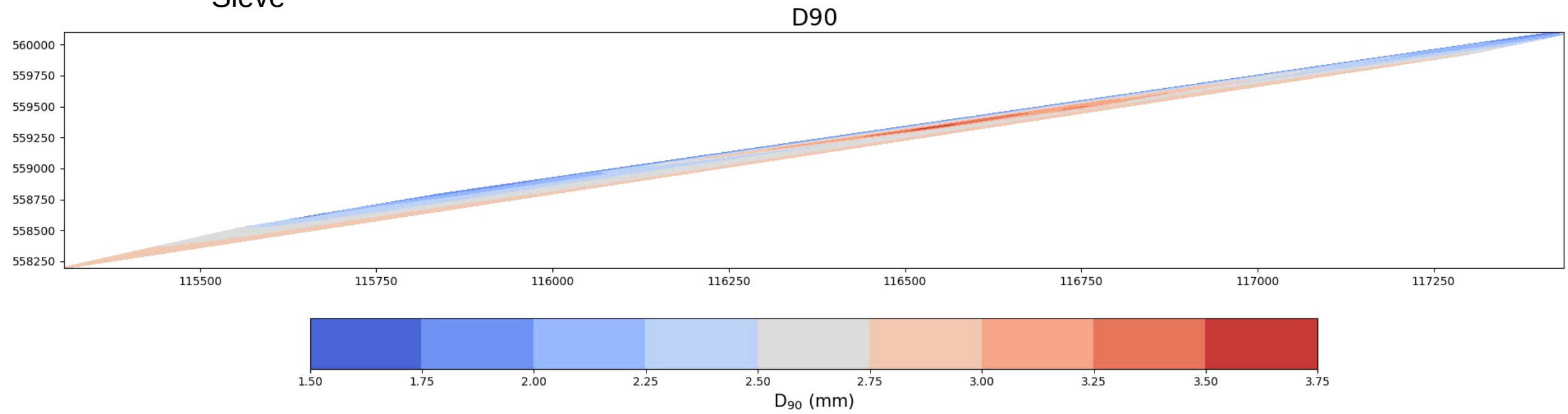

559600
559400
559200
559000
558800
116200
116300
116400
116500
116600
116700
116800

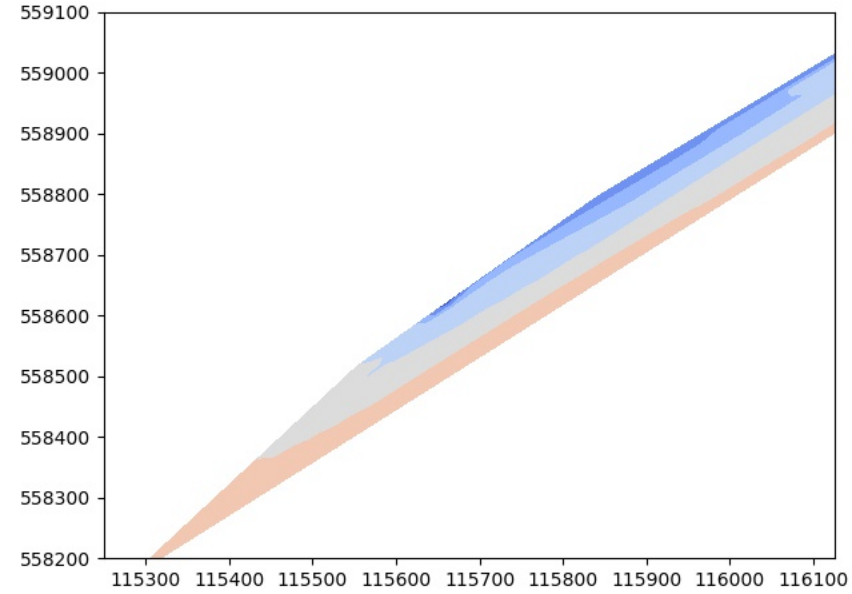

560200
560100
560000
559900
559800
559700
559600
559500
116900
117000
117100
117200
117300
117400
117500

pyDGS


D50
560000
559750
559500
559250
559000
558750
558500
558250
115500
115750
116000
116250
116500
116750
117000
117250
117500
0.645
0.660
0.675
0.690
0.705
0.720
0.735
D50 (mm)
559100
559000
558900
558800
558700
558600
558500
558400
558300
558200
115300
115400
115500
115600
115700
115800
115900
116000
116100
559600
559400
559200
559000
558800
116200
116300
116400
116500
116600
116700
116800
560200
560100
560000
559900
559800
559700
559600
559500
116900
117000
117100
117200
117300
117400
117500

Sieve


D90
560000
559750
559500
559250
559000
558750
558500
558250
115500
115750
116000
116250
116500
116750
117000
117250
1.50
1.75
2.00
2.25
2.50
2.75
3.00
3.25
3.50
3.75
D90 (mm)


559100
559000
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558800
558700
558600
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558400
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558200
115300
115400
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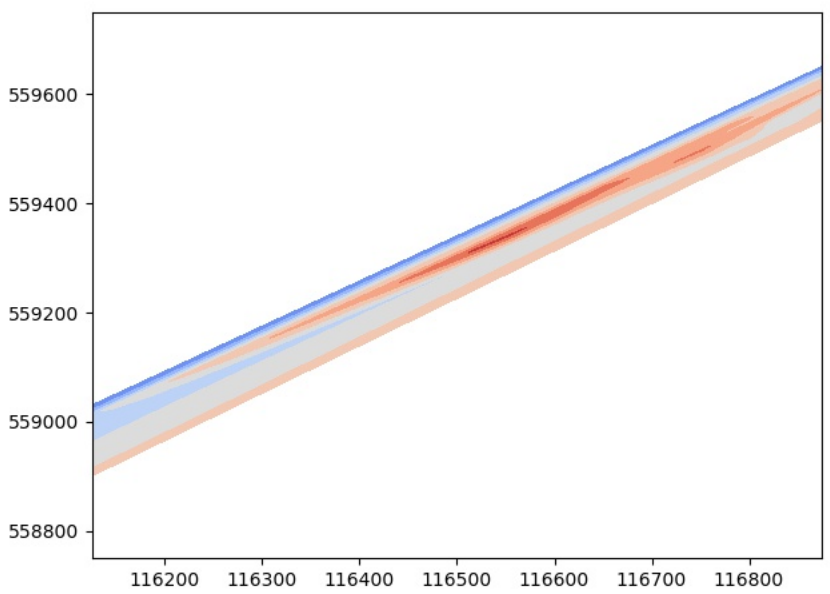
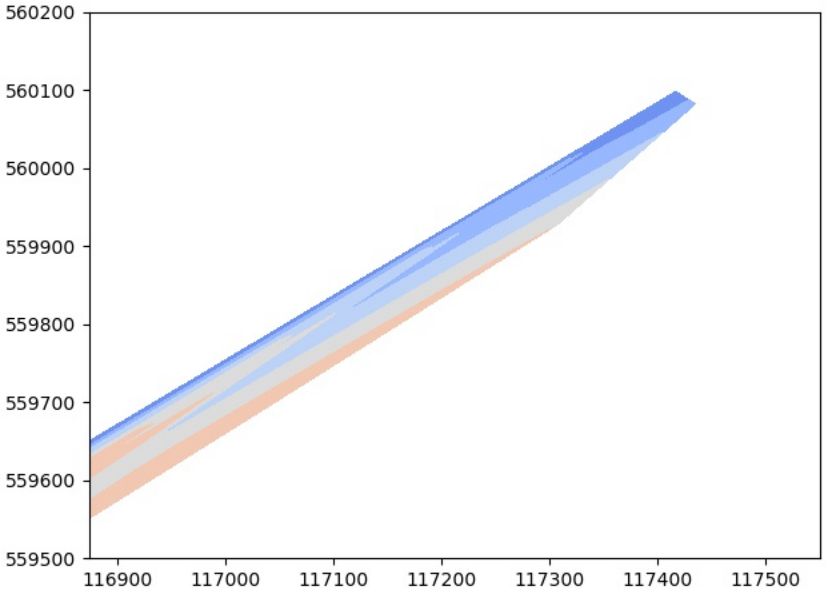
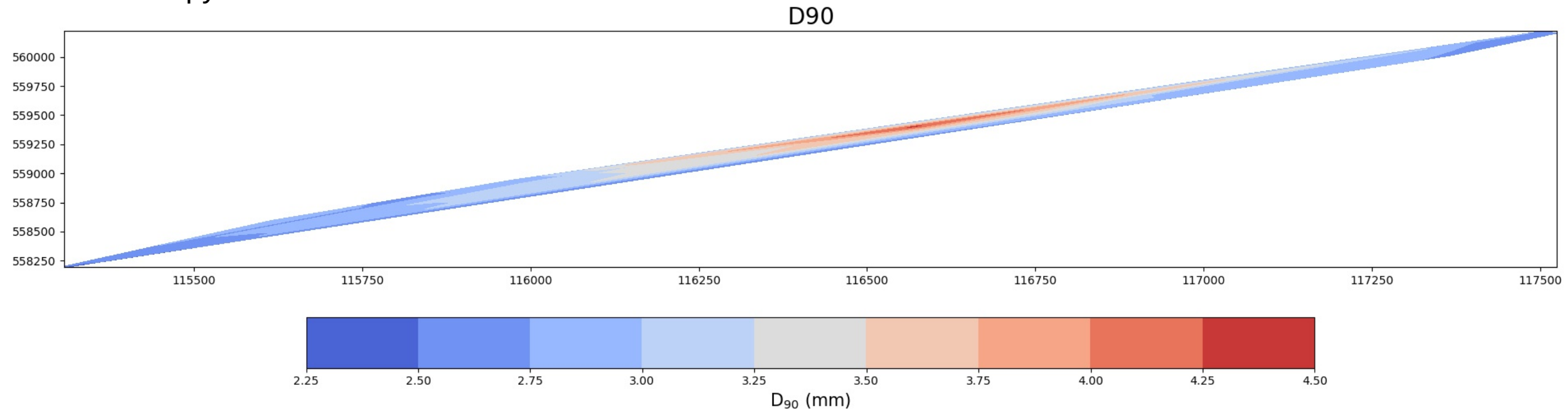
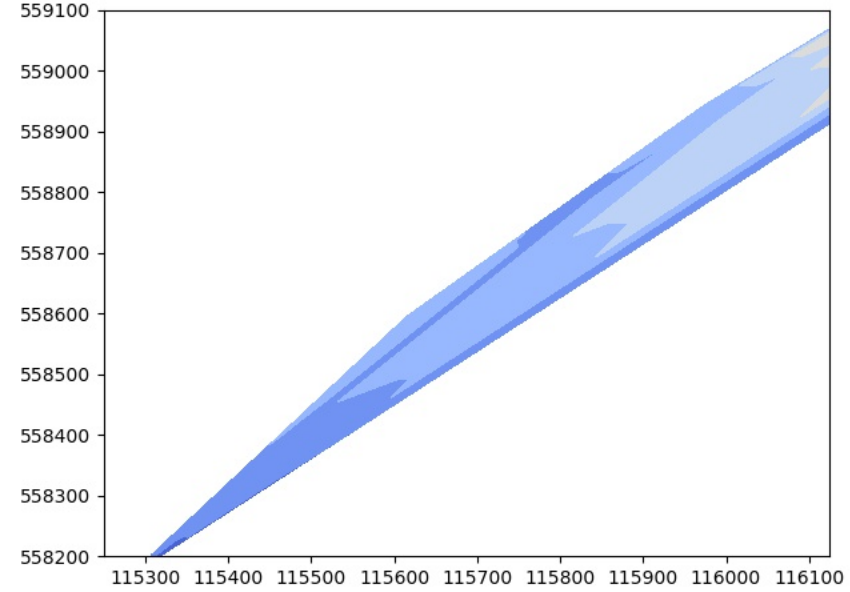
115600
115700
115800
115900
116000
116100


559600
559400
559200
559000
558800
116200
116300
116400
116500
116600
116700
116800


560200
560100
560000
559900
559800
559700
559600
559500
116900
117000
117100
117200
117300
117400
117500

pyDGS


D90
560000
559750
559500
559250
559000
558750
558500
558250
115500
115750
116000
116250
116500
116750
117000
117250
117500
2.25
2.50
2.75
3.00
3.25
3.50
3.75
4.00
4.25
4.50
D90 (mm)


559100
559000
558900
558800
558700
558600
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558200
115300
115400
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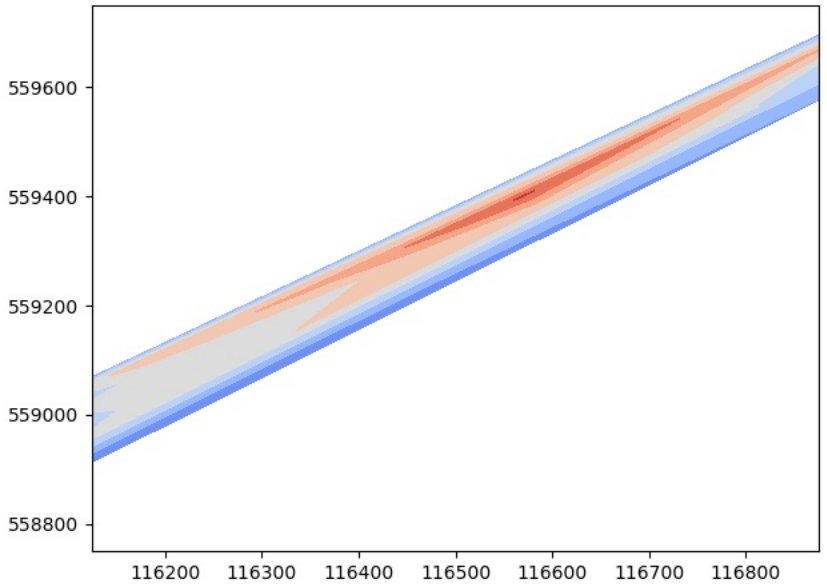
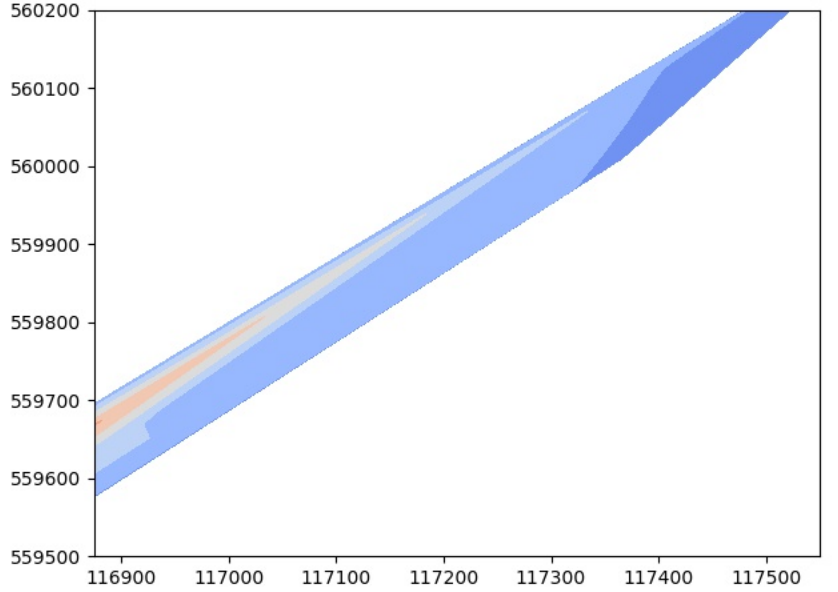
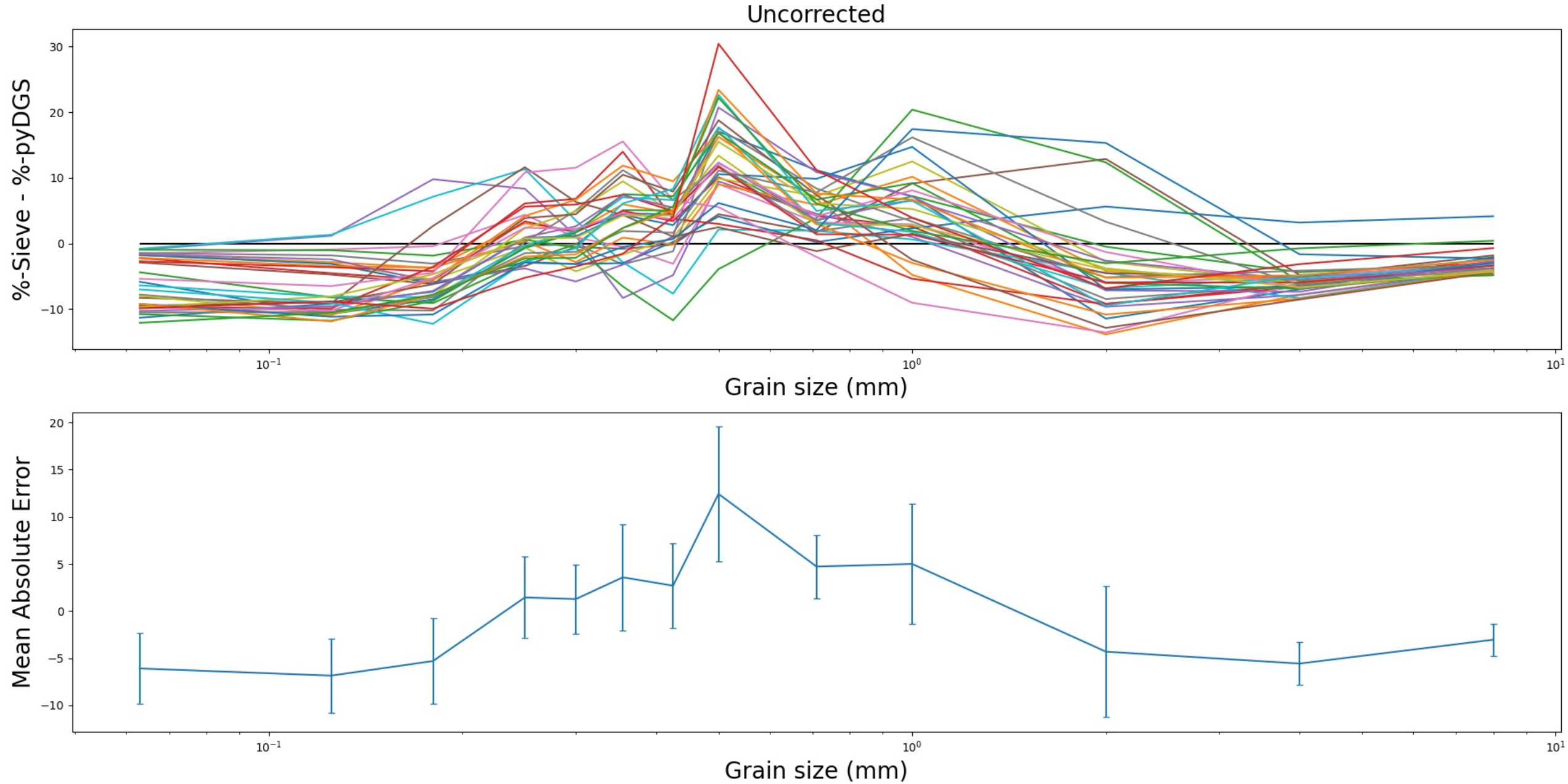
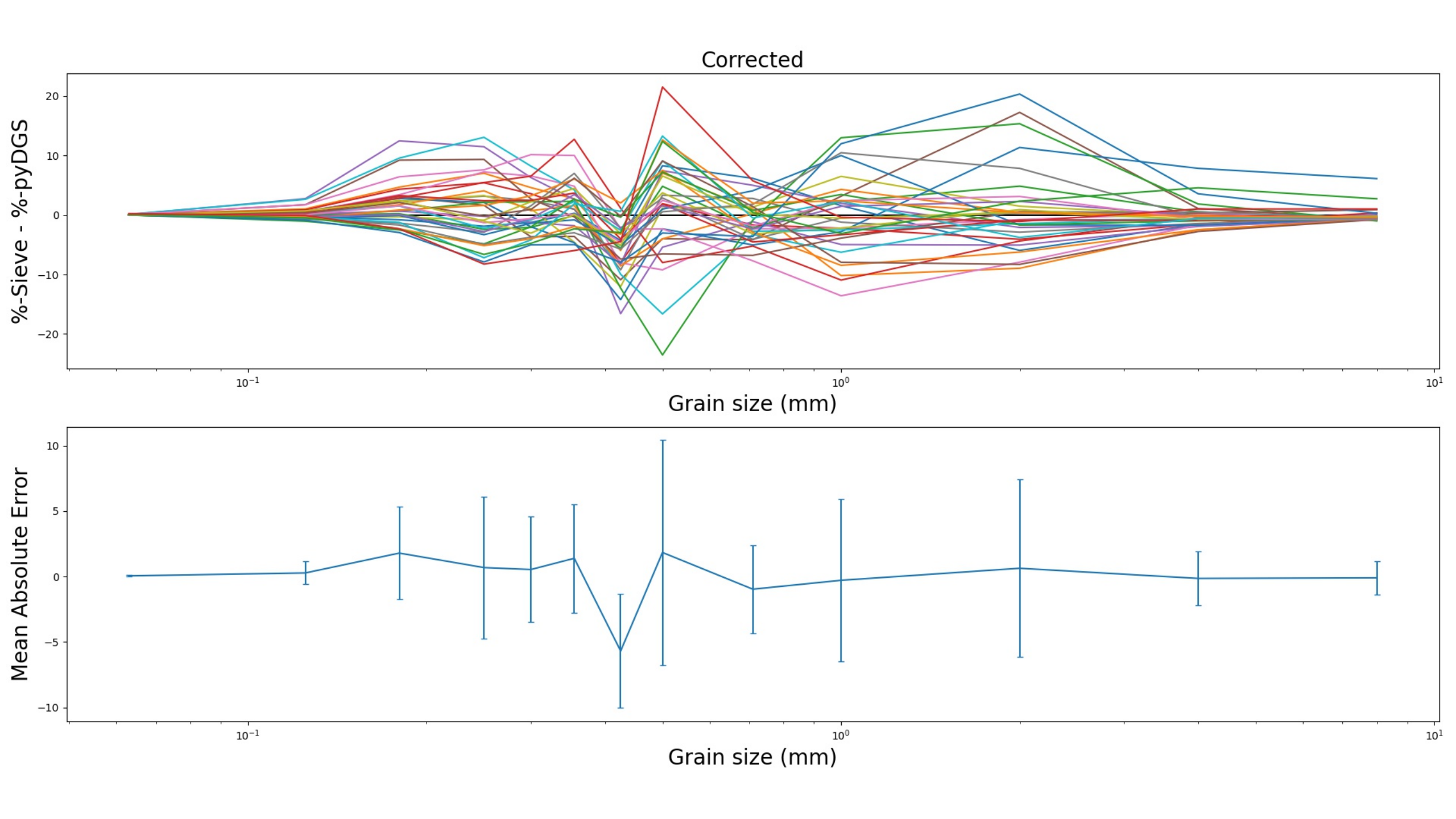
115600
115700
115800
115900
116000
116100


559600
559400
559200
559000
558800
116200
116300
116400
116500
116600
116700
116800


560200
560100
560000
559900
559800
559700
559600
559500
116900
117000
117100
117200
117300
117400
117500

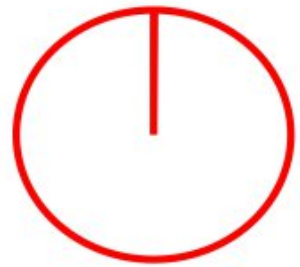

Uncorrected
%-Sieve - %-pyDGS
30
20
10
0
−10
10^{-1}
10^{0}
10^{1}
Grain size (mm)
Mean Absolute Error
20
15
10
5
0
−5
−10
10^{-1}
10^{0}
10^{1}
Grain size (mm)


Corrected
%-Sieve - %-pyDGS
20
10
0
−10
−20
10^{-1}
10^{0}
10^{1}
Grain size (mm)
Mean Absolute Error
10
5
0
−5
−10
10^{-1}
10^{0}
10^{1}
Grain size (mm)

$$A_t = 1000\ mm^2$$

10 %

1 mm



$$A_g = \pi \left(\frac{D}{2}\right)^2$$

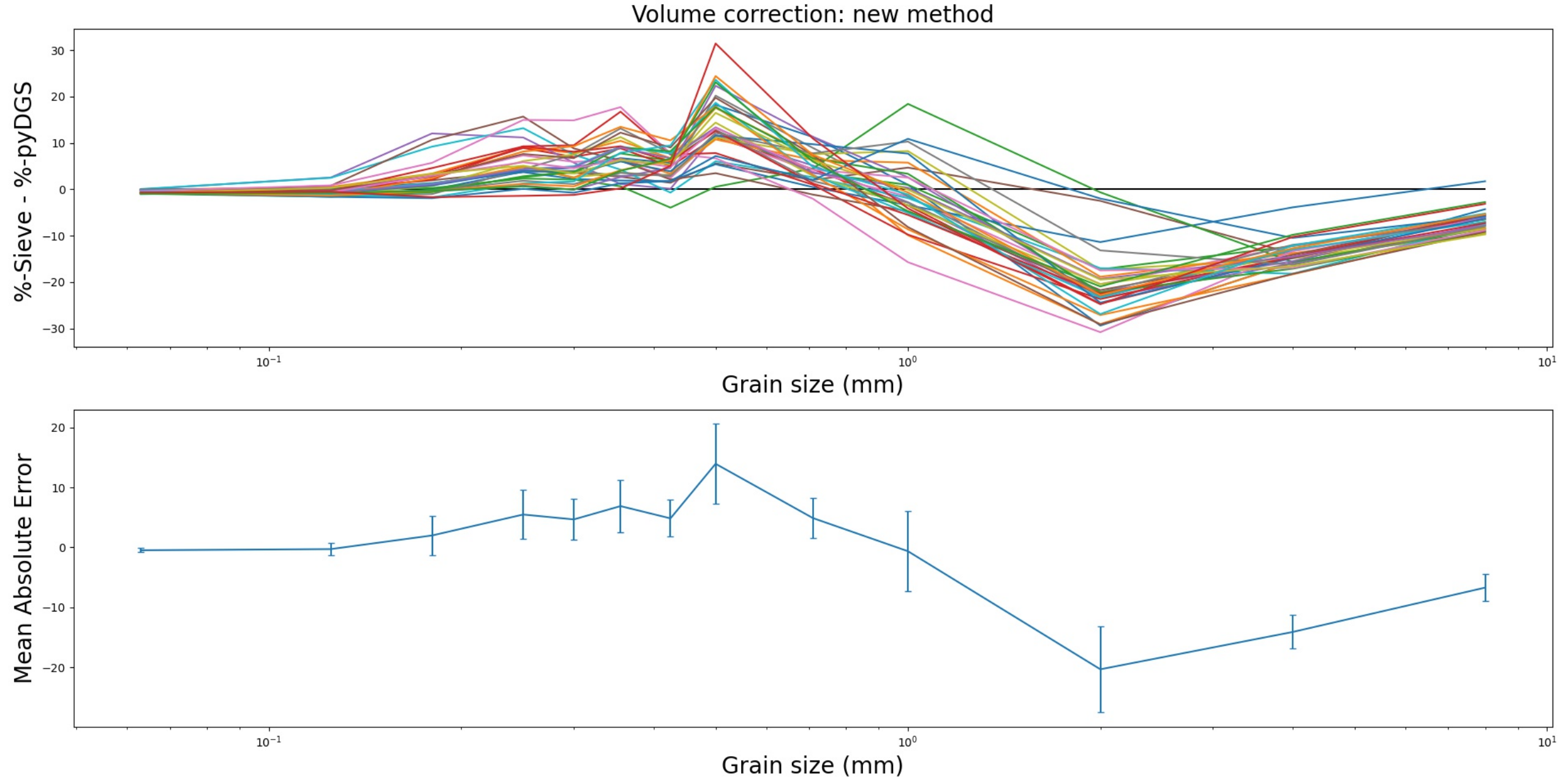
$$V_g = \frac{\pi}{6} D^3$$

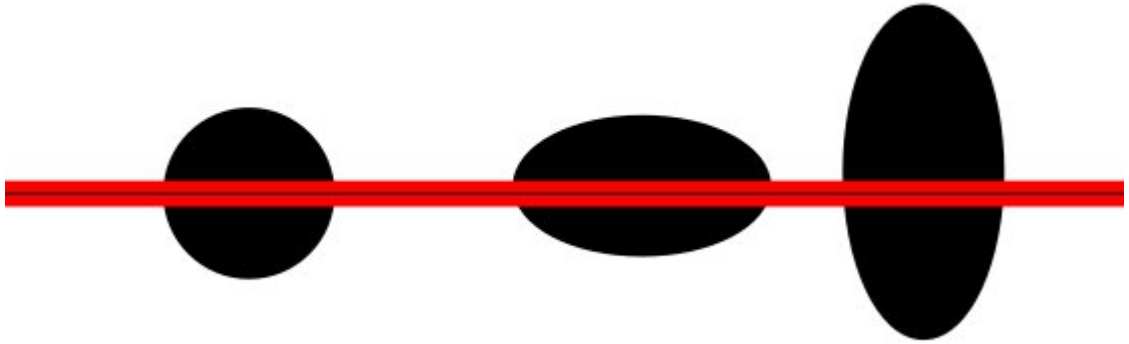
$$m_g = V_g \times \rho =$$

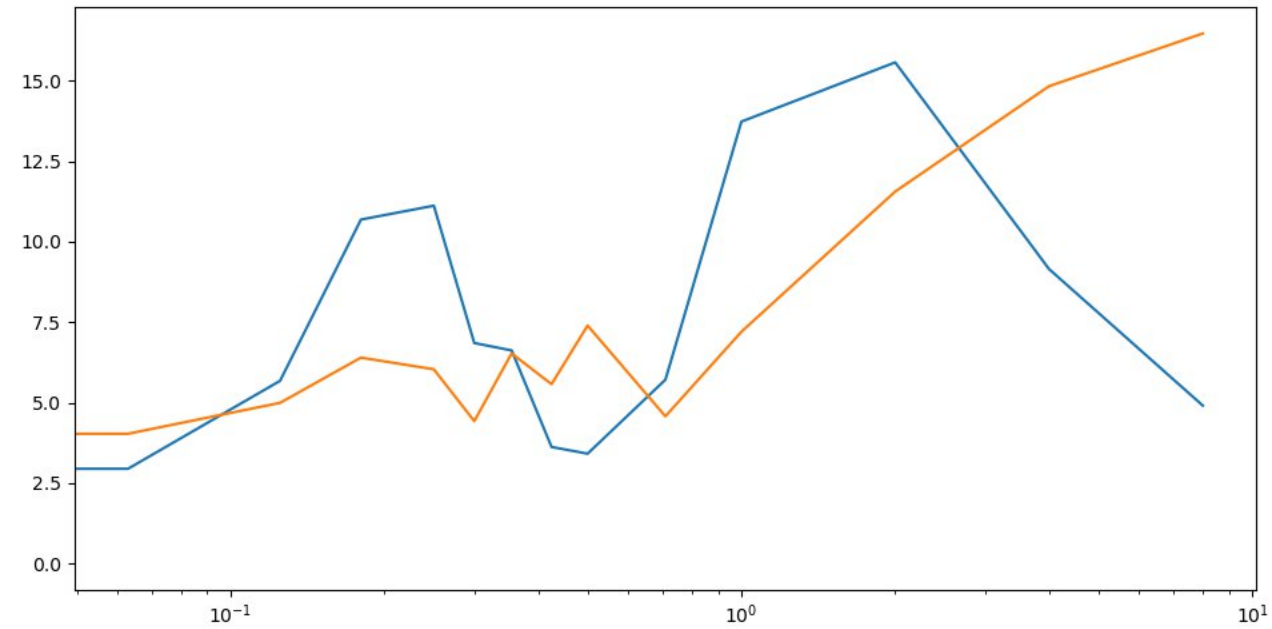
$$\hookrightarrow 100\ mm^2$$

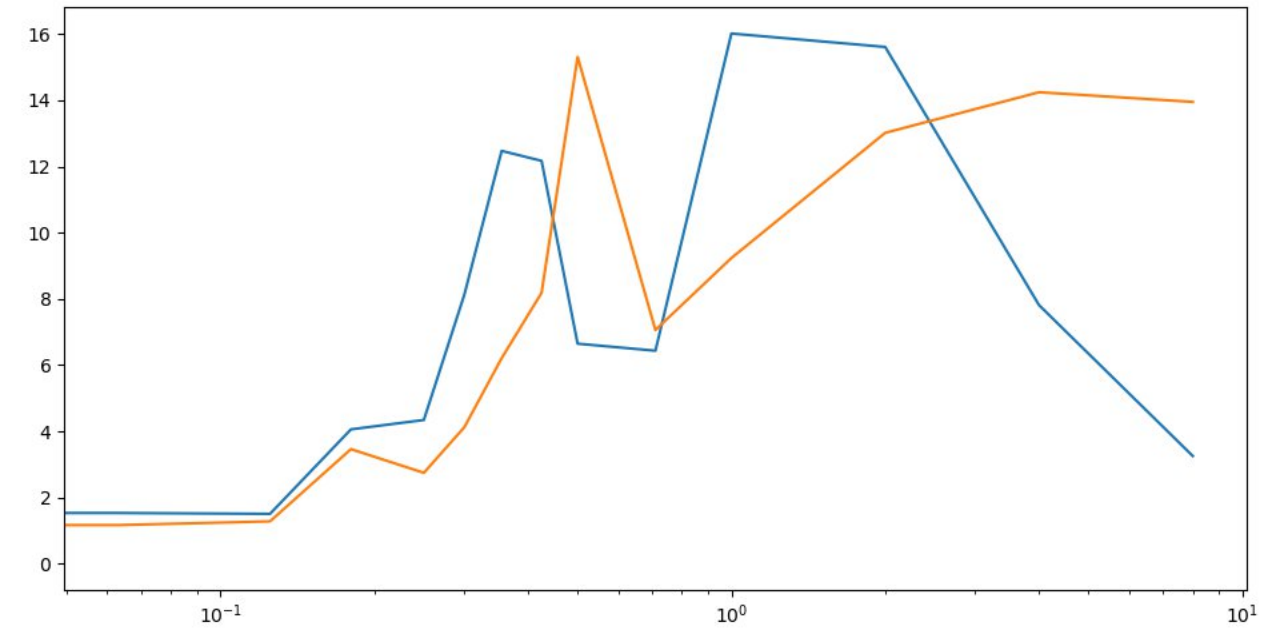
$$N_{b_{grains}} = \frac{A_{grain}}{A_{\%}}$$

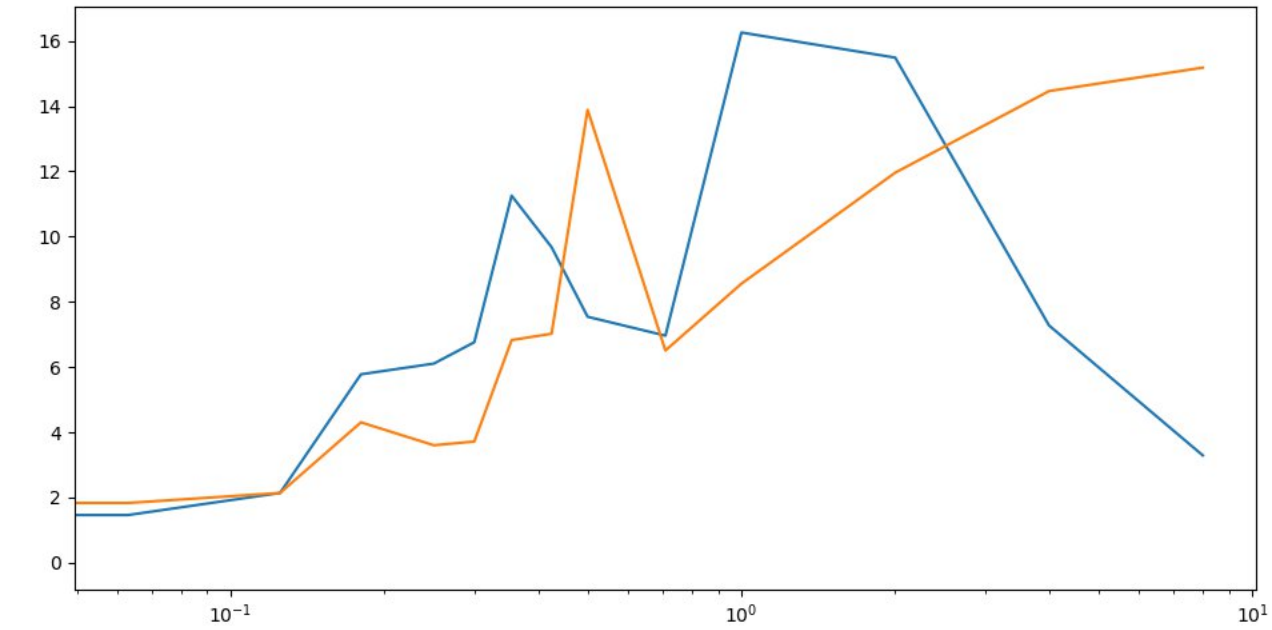
$$N_{b_{grains}} \times m_g = \text{Mass per grain frac}$$

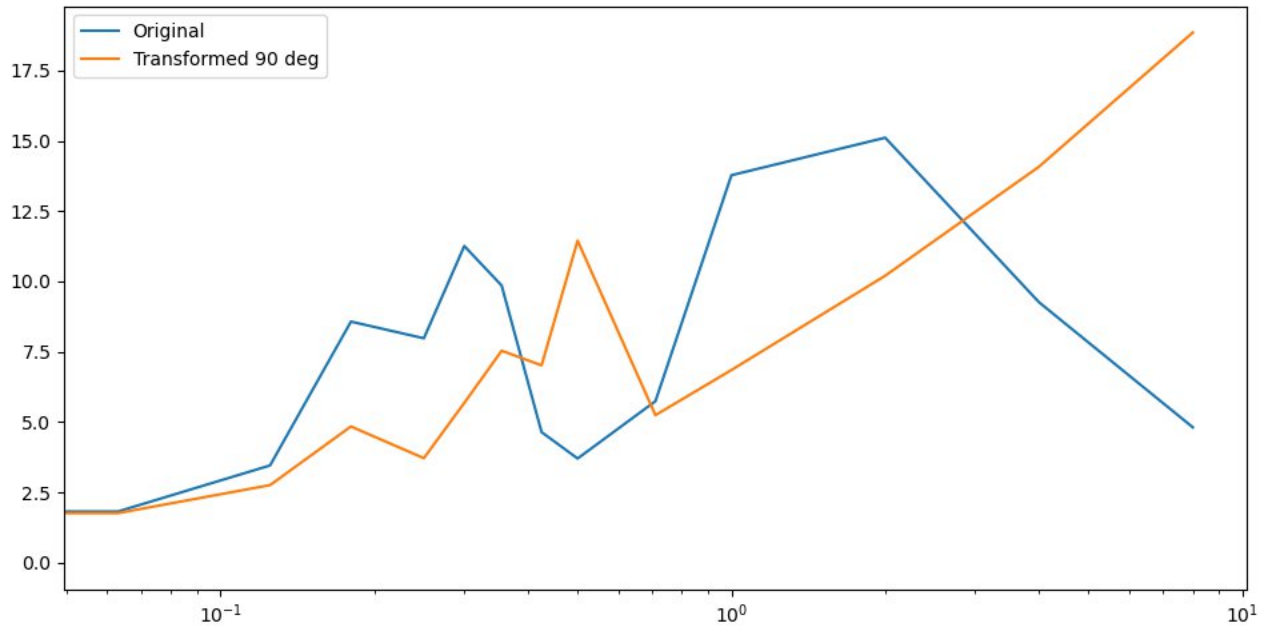

Volume correction: new method
%-Sieve - %-pyDGS
30
20
10
0
−10
−20
−30
10^{-1}
10^{0}
10^{1}
Grain size (mm)
Mean Absolute Error
20
10
0
−10
−20
10^{-1}
10^{0}
10^{1}
Grain size (mm)




15.0
12.5
10.0
7.5
5.0
2.5
0.0
10^{-1}
10^{0}
10^{1}


16
14
12
10
8
6
4
2
0
10^{-1}
10^{0}
10^{1}


16
14
12
10
8
6
4
2
0
10^{-1}
10^{0}
10^{1}


Original
Transformed 90 deg
17.5
15.0
12.5
10.0
7.5
5.0
2.5
0.0
10^{-1}
10^{0}
10^{1}