Reports on Case Study I
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Results of the microstructure information of the attached EBSD data of a high entropy alloy (HEA)

1) The detailed analysis of the grain size and shape distribution functions and fitting.

Figure 1: Grain mean orientation map

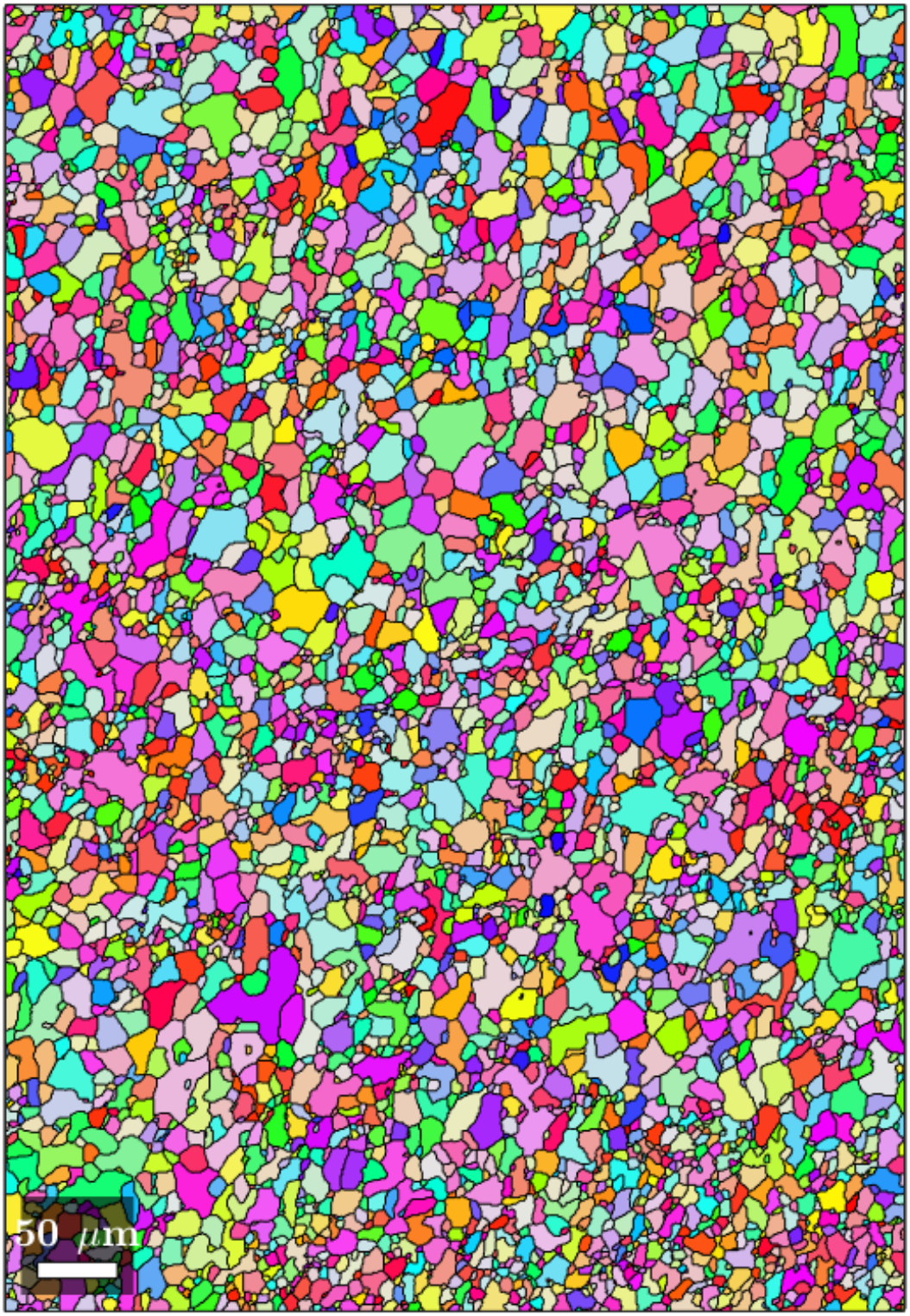


Figure 2 and 3: Boundary grain mean orientation map and inner grain mean orientation map.

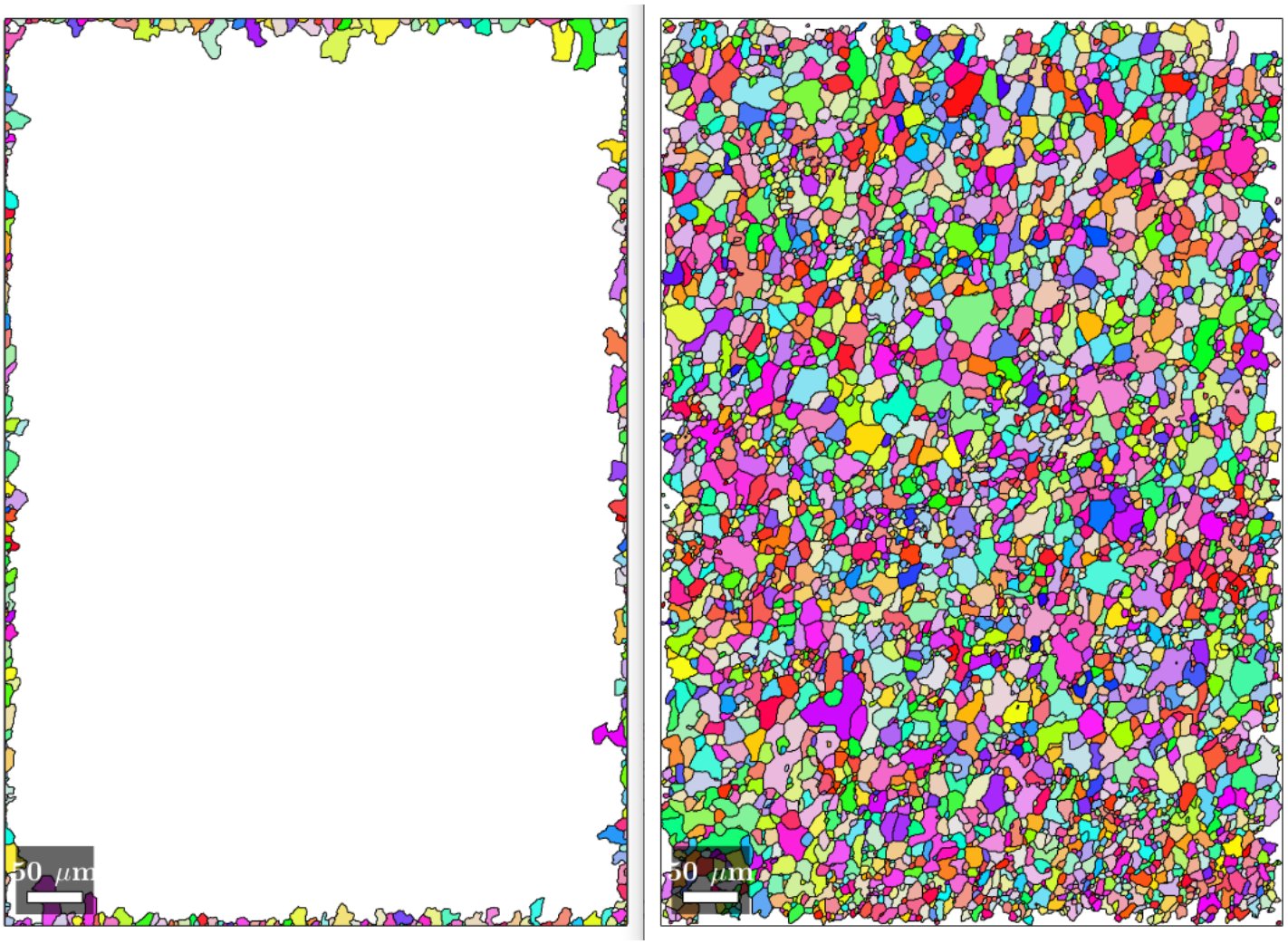


Figure 4: Inner grain mean orientation map with fitted ellipses

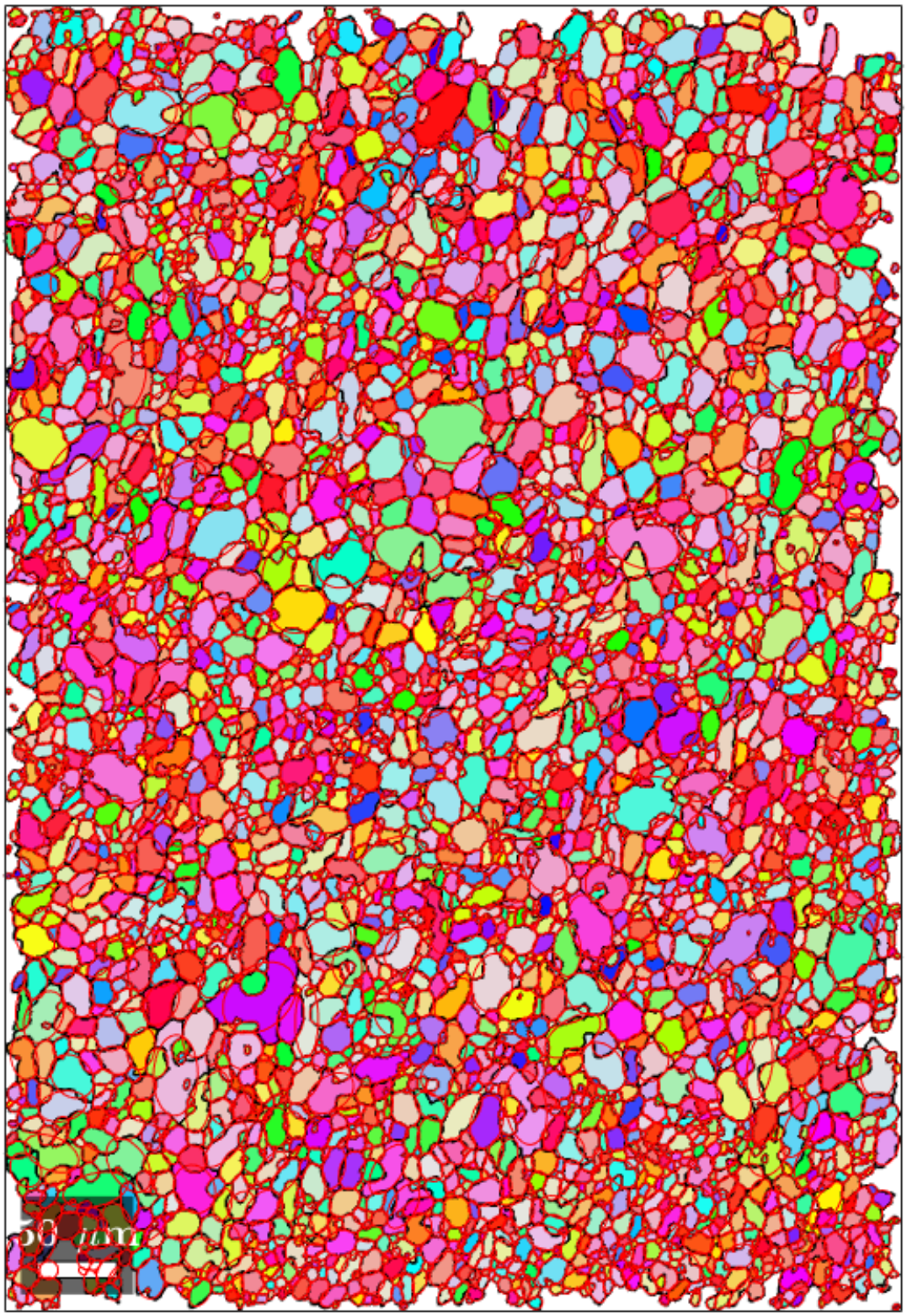
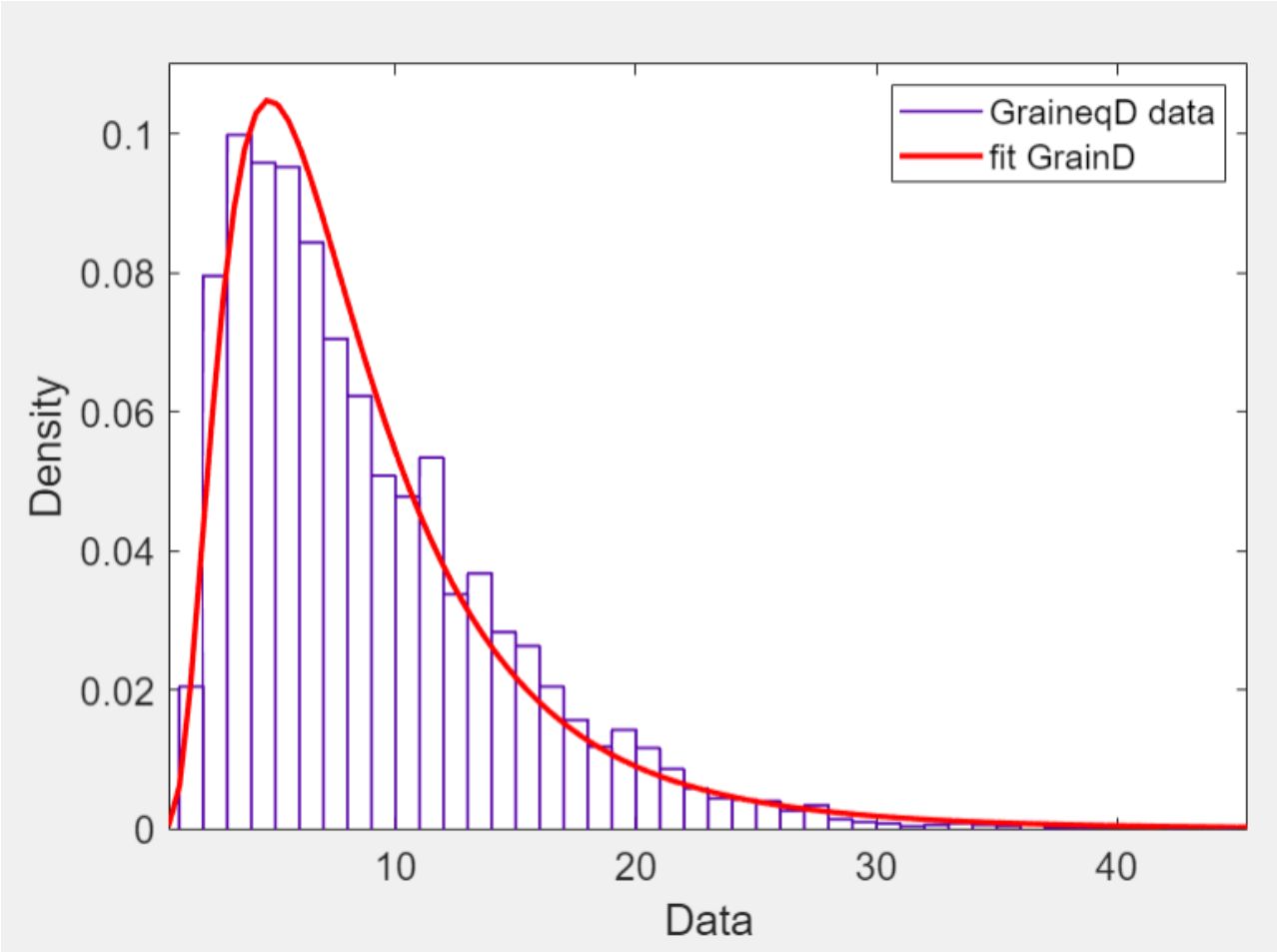


Figure 5: Grain size distribution with log-normal function fitting



Results:

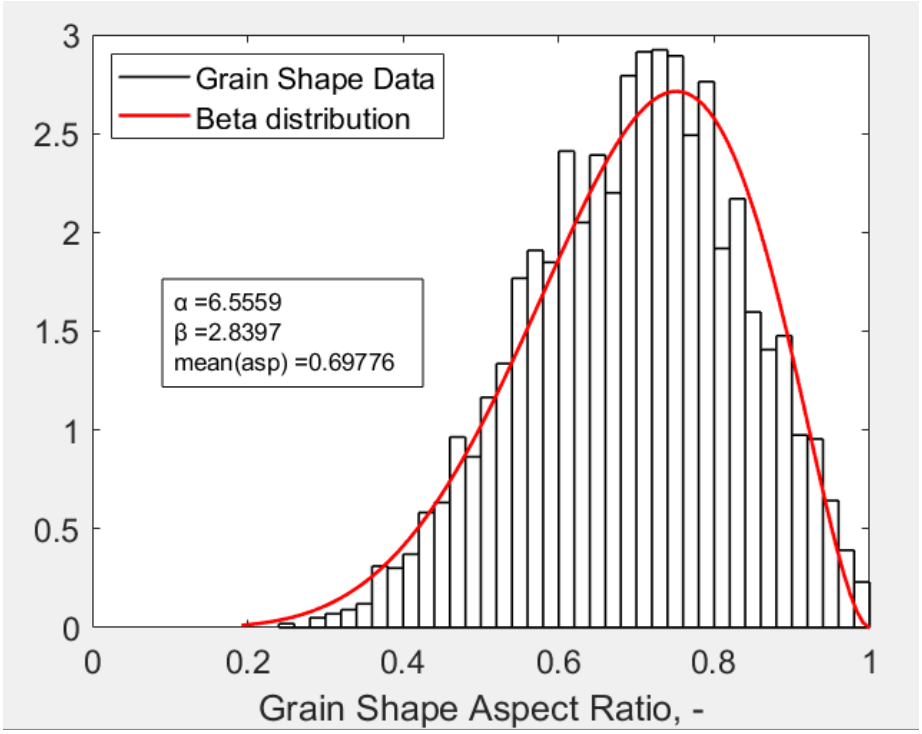
Distribution: Lognormal
Log likelihood: -14759.8
Domain: -Inf < y < Inf
Mean: 8.93043
Variance: 41.8128

Parameter	Estimate	Std. Err.
mu	1.9787	0.00920295
sigma	0.649249	0.00650845

Estimated covariance of parameter estimates:

	mu	sigma
mu	8.46943e-05	-6.82161e-20
sigma	-6.82161e-20	4.23599e-05

Figure 6: Grain shape distribution with Beta function fitting



2) The procedure and results of the RVE model generation.

Figure 7: Phase map of RVE

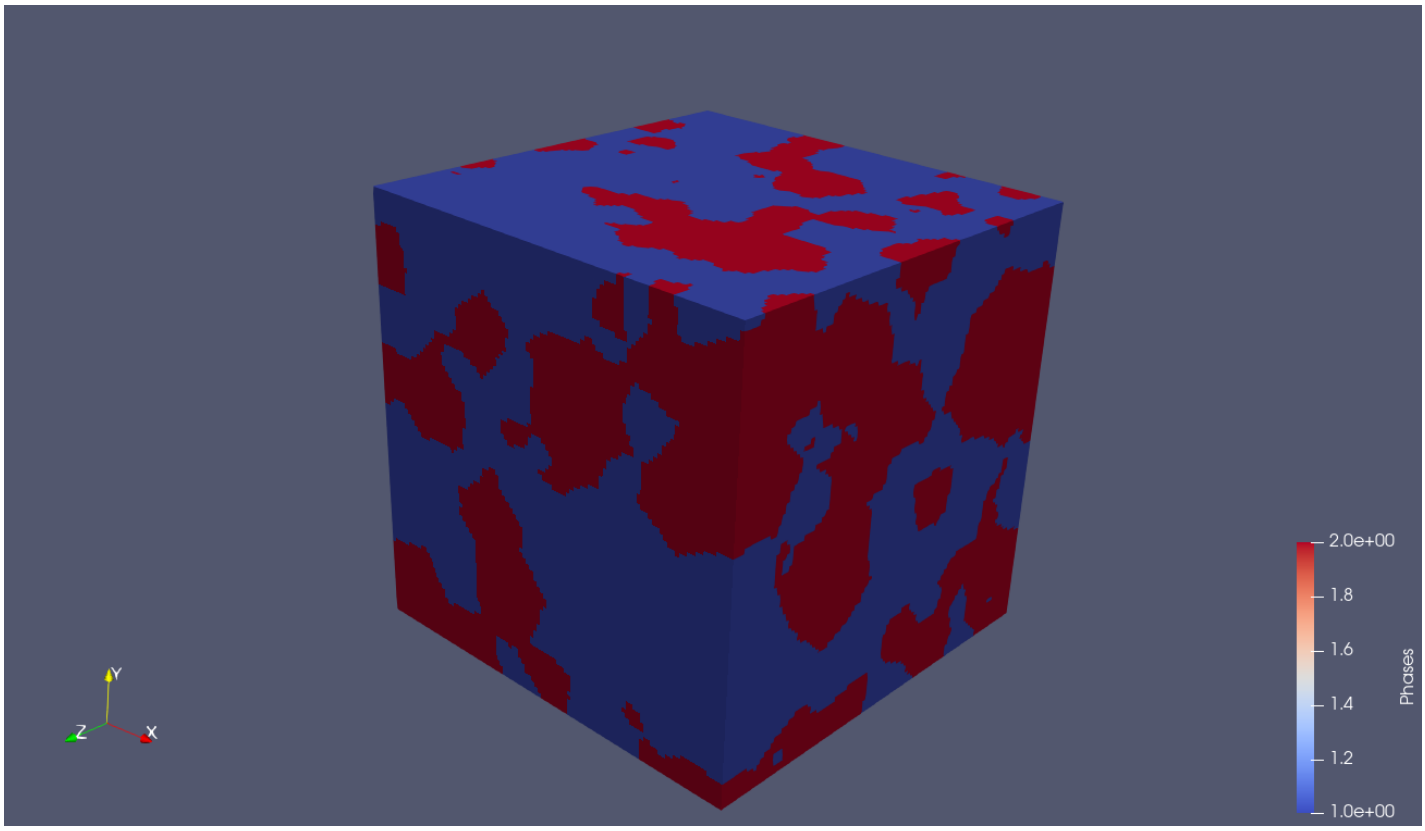


Figure 8: Grain map of RVE colored by FeatureIds

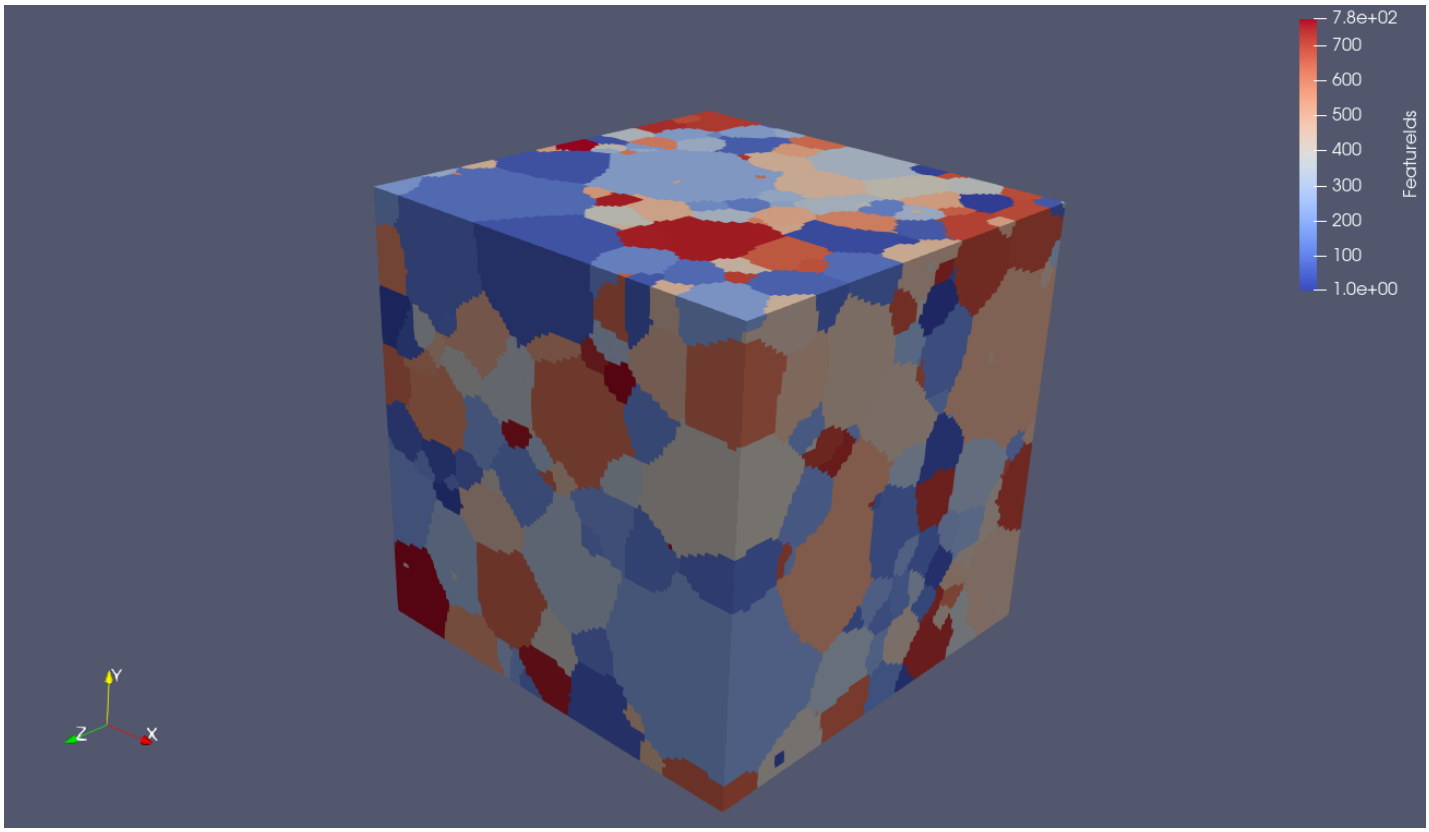


Figure 9: Phase map of RVE - phase1

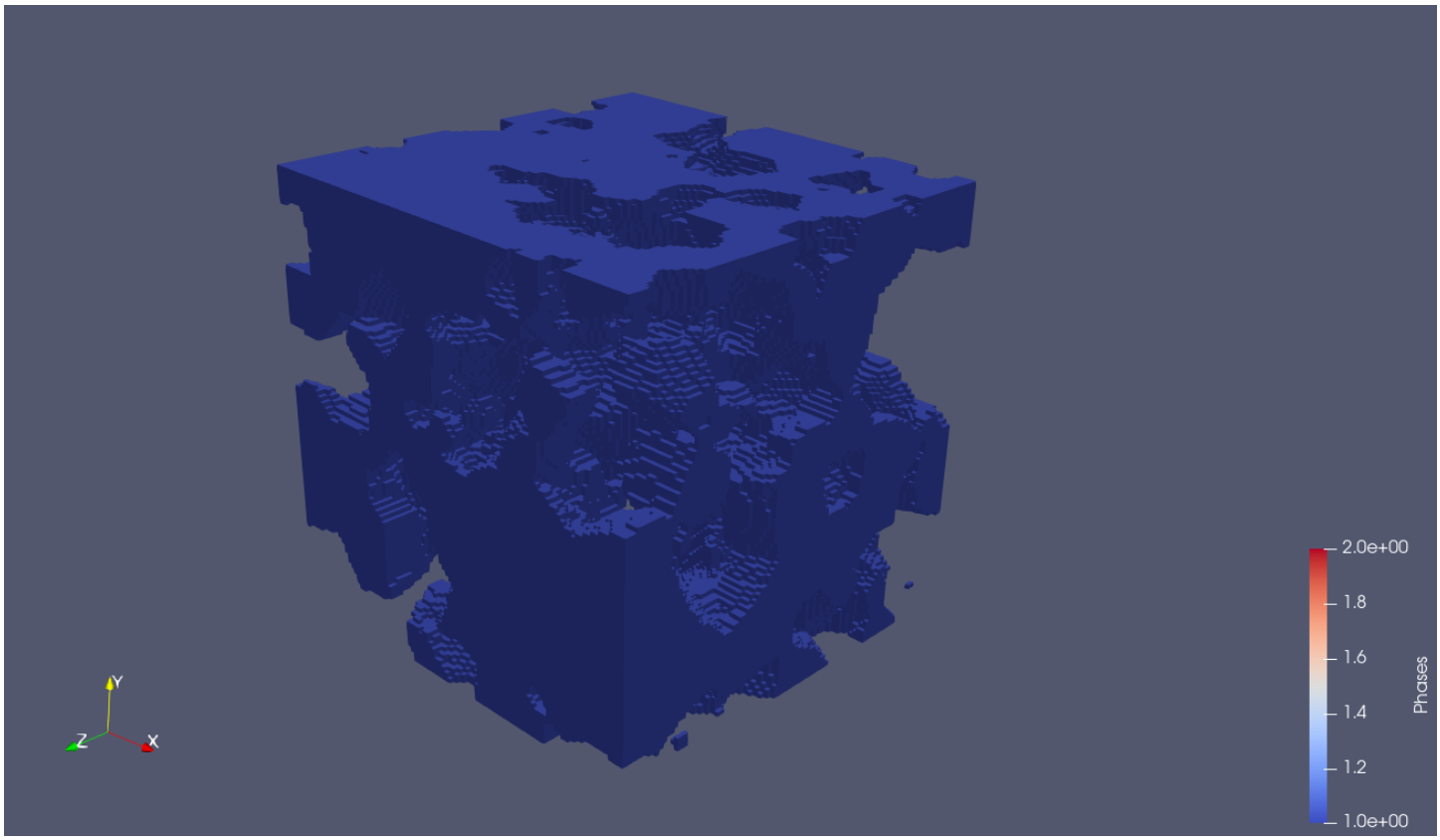


Figure 10: Phase map of RVE - phase2

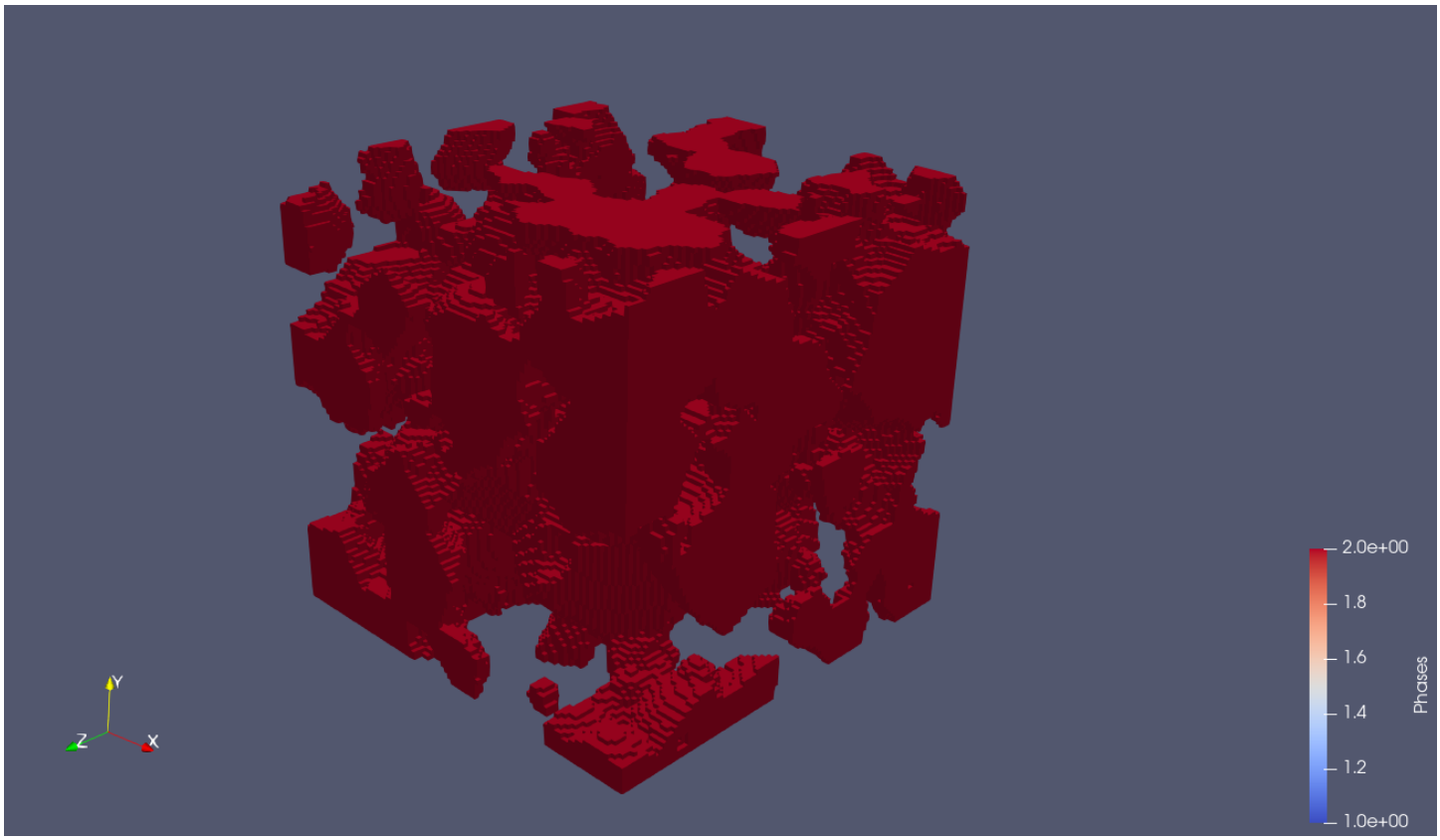


Figure 11: Grain map of RVE - phase1, coloring by EulerAngles-X

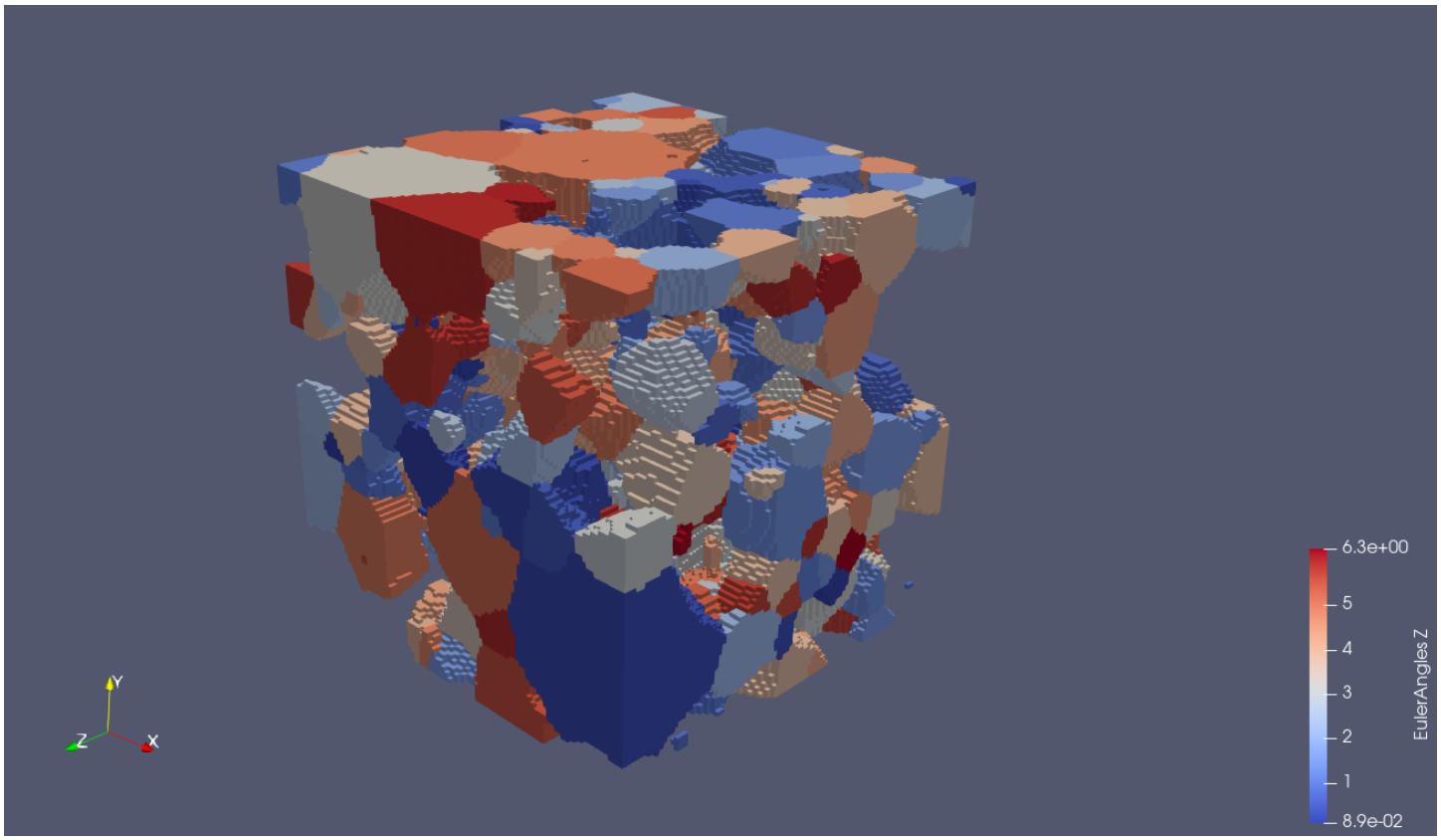
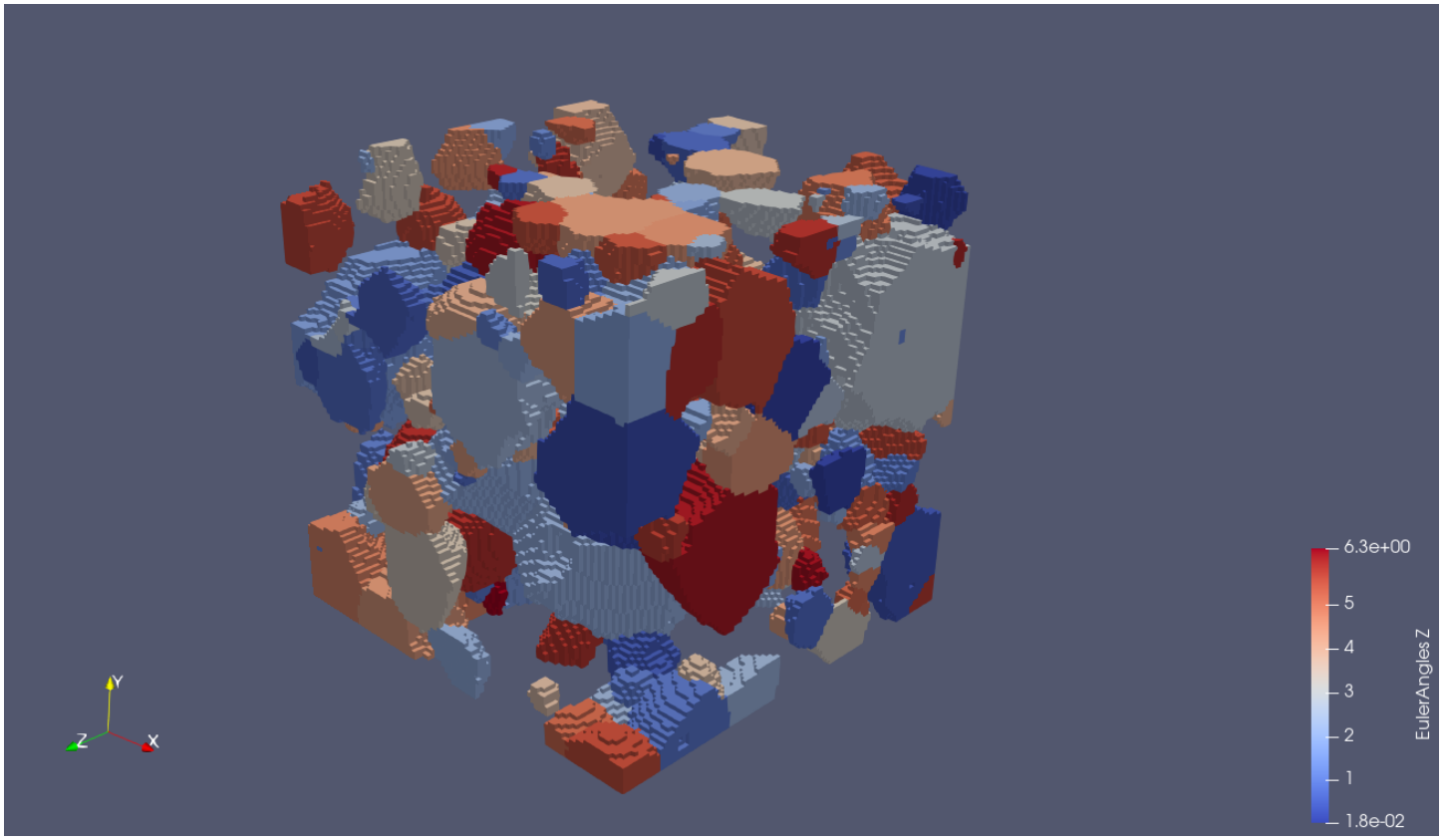


Figure 12: Grain map of RVE - phase2, coloring by EulerAngles-X



For questions 3,4,5, I cannot figure out what I should do, partly because I ran out of time as I need to study for other subjects. If possible, can I have the answer file? I'm genuinely curious to understand more about RVE and microstructure. Would you consider sending me the answer file to my email? My mail is binh.nguyen@aalto.fi. I promised I wouldn't share the answer file with anyone. Thank you in advance!