

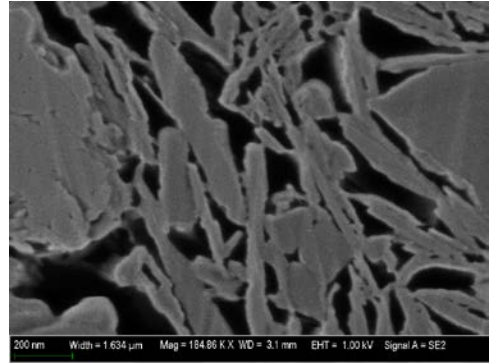
# Preliminary approach to quantification of mudrock microfabric

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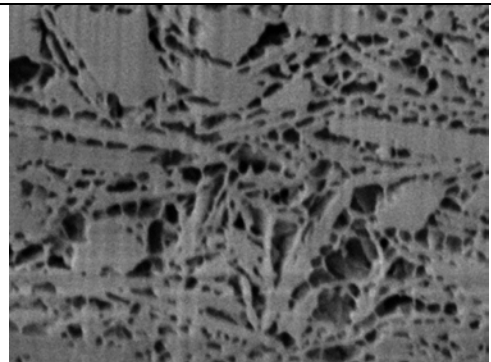
## ABSTRACT

I present preliminary results using image analysis to quantify mudrock fabric. I use Conventional SEM and Cryo-SEM on ion-milled samples and FIB-sectioned samples, respectively, to image resedimented Boston Blue Clay. Then I use ImageJ software to characterize the fraction of grains or pores. With this approach I can image pores down to around 10-20 nm. In future work, I will investigate the influence of oven-drying, resolution, and the size of images on the results. Conventional SEM techniques will be used to image oven dried samples, whereas Cryo-SEM will be used to image wet samples. Preliminary results show that the microstructure of oven-dried samples is different than that of wet samples, which suggests that oven-drying is changing the microstructure of mudrocks.

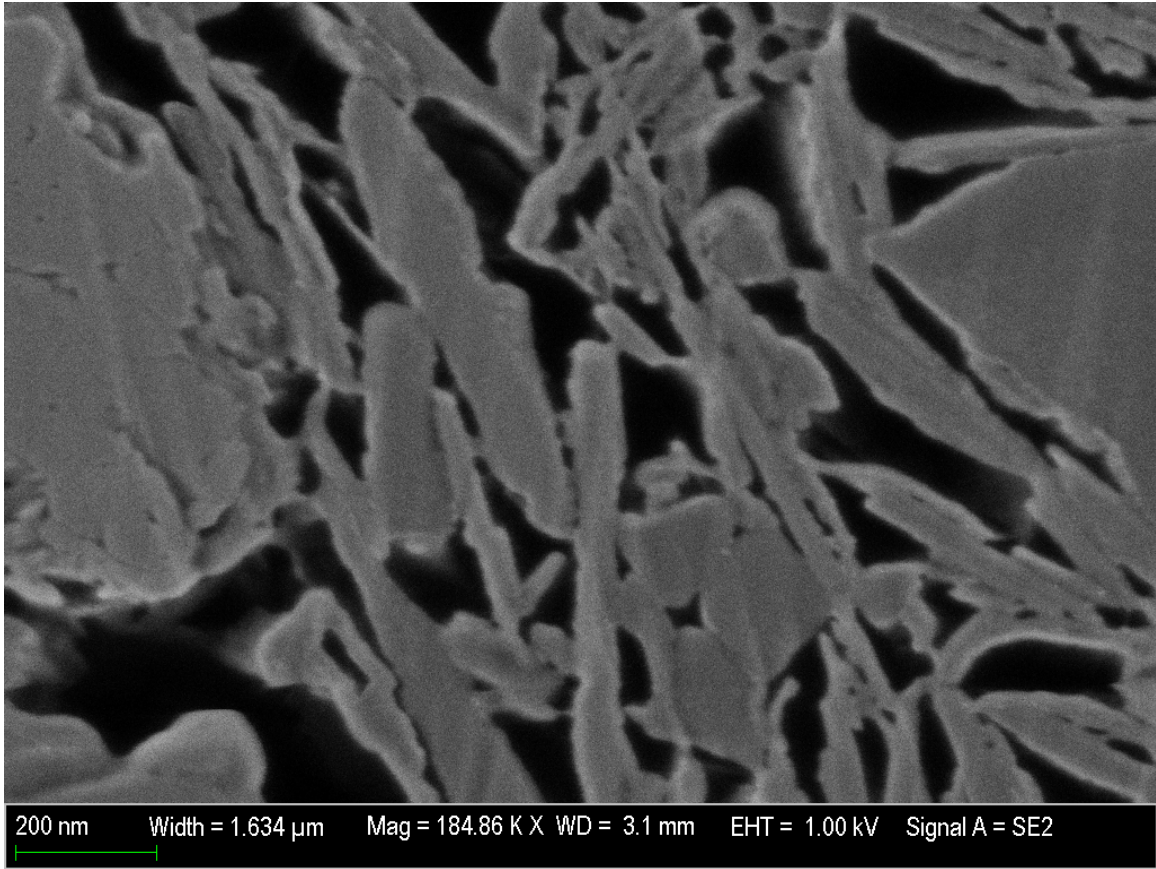
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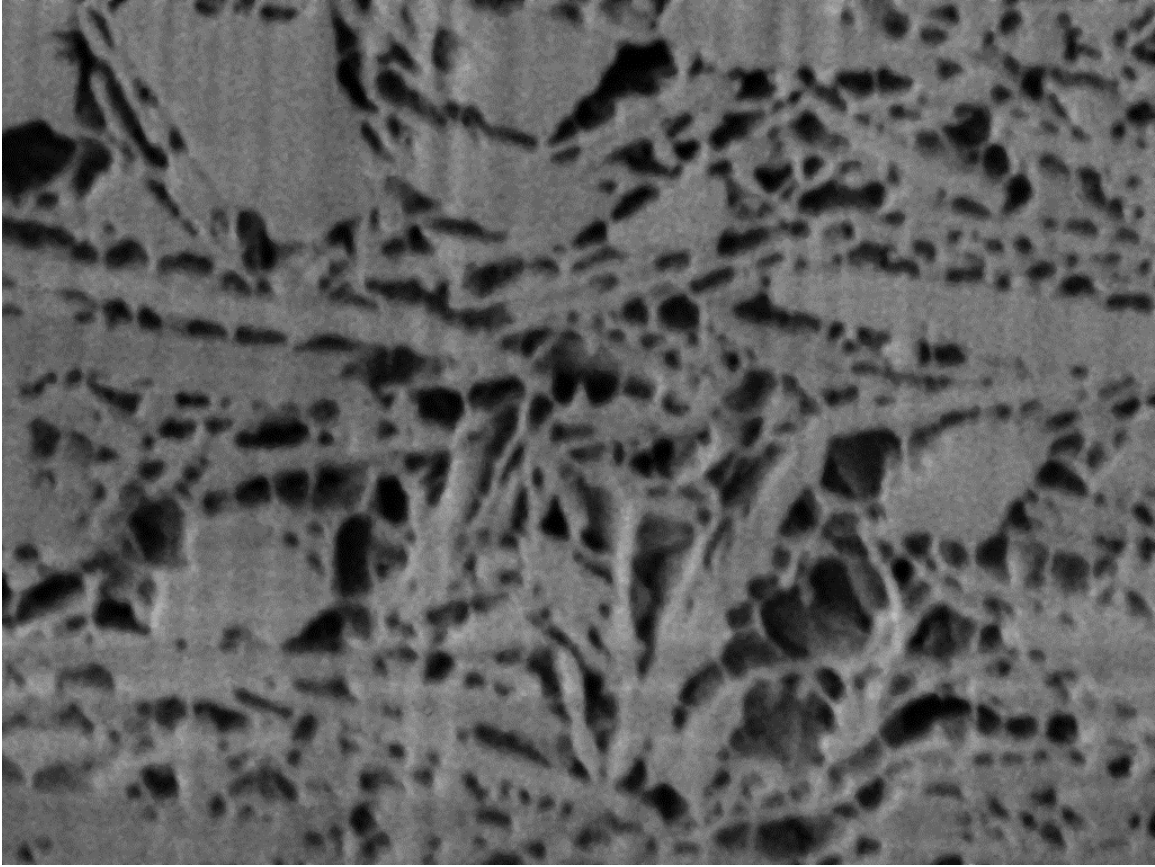
**Fig. 1:** SEM image of a vertical section of a Resedimented Boston Blue Clay (RBBC) sample showing clay particles and pore space. The sample was oven dried and ion milled prior to imaging. The image was segmented to separate the pore space and particles for further analysis.



**Fig. 2:** Cryo-SEM image of a vertical section of a Resedimented Boston Blue Clay (RBBC) sample showing clay particles and pore space. The sample was frozen in liquid nitrogen prior to imaging under Cryo-conditions. FIB was then used to cut a section in the material for imaging. The image was segmented to separate the pore space and particles for further analysis. The width of the field of view is 3.93 microns.



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