Table 1: Assessment of OrthoSAM prediction based on ImageGrains prediction.

	Image	ImageGrain	OrthoSAM	OrthoSAM IRn>0.7	OrthSAM (standard settings)	OrthSAM (standard settings) IRn>0.7
0	FH	1742	2819	2781	1927	1845
1	K1	1883	1358	1354	1113	1062
2	S1	4660	4316	4289	2915	2880

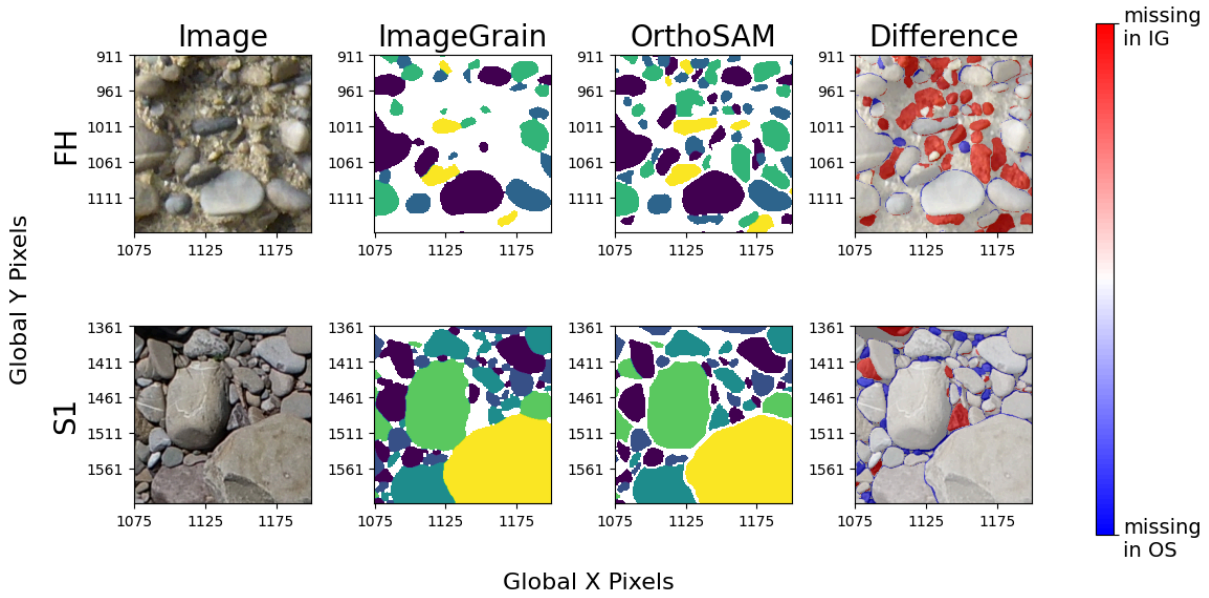

Figure 1: Comparison of OrthoSAM (OS) and ImageGrains (IG) predictions for center crops of image FH and S1. We note that the number of detected objects varies between the two models for each dataset. For example, for image S1, the OrthoSAM prediction identified 4316 objects, while ImageGrains identified 4660 objects. This ratio of 0.9 (4316/4660) is different for image FH (2819/1742=1.6). This does not allow a precision and accuracy assessment with the same training data. The difference plot visualizes the agreement and disagreement between two predictions. Red regions highlight areas where OrthoSAM identifies an object, and ImageGrains does not. While blue regions highlight areas where ImageGrains identifies an object, and OrthoSAM does not. Both examples demonstrated OrthoSAM's capability in fine object segmentation. However, due to the lack of a classification component, OrthoSAM has the inherent limitation that irrelevant objects may remain in the segmentation results. In particular, we see patches of sand that were falsely segmented in FH. Here, we see that lower resolution or blurriness in the image can exaggerate the issue, resulting in more false positives.

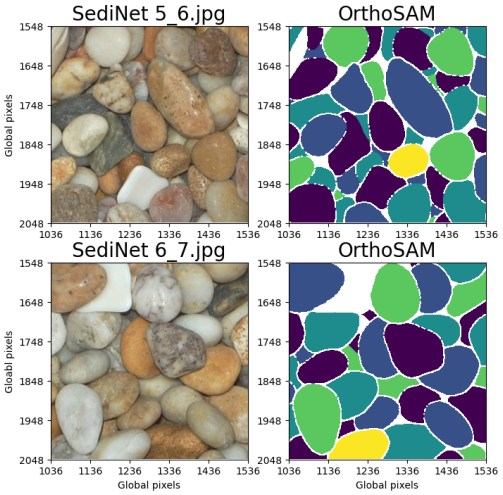

Figure 2. OrthoSAM segmentation of two SediNet images. A 500 x 500 pixel crop was taken from the lower-right corner of the full image.

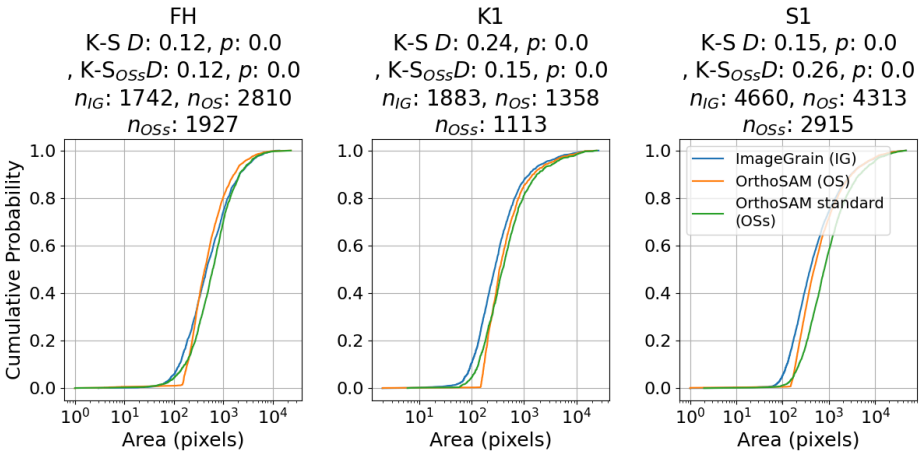

Figure 3. Cumulative size distribution of ImageGrains predictions and OrthoSAM predictions for images FH, K1, and S1. OrthoSAM predictions were made with two different settings: custom parameters for the respective image (OS) and standard parameters for large images (OSs). The number of identified objects varies between the methods, with OrthoSAM (OS and OSs) detecting more objects than ImageGrains (IG). A two-sided K-S test was performed to compare the similarity of the size distributions. For all images, the null hypothesis that the samples come from the same distribution was rejected ($p < 0.05$), suggesting that the segment size distributions produced by ImageGrains and OrthoSAM differ significantly. We partly explain this discrepancy by the different number of detected objects (more small objects detected by OrthoSAM).