

Details of the bedrock slab experiment and bedrock laser scans

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Bedrock slab experiment

- Slab built over a piece of foam laid on the floor → no slope on any direction.
- Layer of pea gravel laid over the foam and covered with a thin layer of concrete. Concrete used is: Quickcrete™ concrete mix:
<https://www.quikrete.com/productlines/concretemix.asp>
https://www.quikrete.com/pdfs/data_sheet-concrete%20mix%201101.pdf
- Concrete was spray-painted white to increase contrast with walnut shells.
- Following slide shows images of the slab with increasing degrees of alluviation.



Sediment amounts and alluvial cover (p_c)

The table summarizes the weight increments of walnut shells distributed over the bedrock slab and the resulting alluvial cover values obtained after processing the image (see S2).

The following slide shows the slab after binarizing the images.

Measurement	Weight		Cover - pc		
	[g]	Fraction	Cumulative	Set 1	Set 2
0	0	0	0.00	0.00	0.00
1	15	0.02	0.02	0.15	0.14
2	46	0.07	0.09	0.43	0.41
3	50	0.08	0.17	0.59	0.59
4	32	0.05	0.22	0.66	0.62
5	71	0.11	0.33	0.78	0.78
6	54	0.08	0.41	0.81	0.80
7	41	0.06	0.48	0.87	0.87
8	88	0.14	0.61	0.93	0.94
9	85	0.13	0.75	0.96	0.97
10	126	0.20	0.94	0.97	0.97
11	38	0.06	1.00	0.97	0.98
Total	646	1	-	-	-

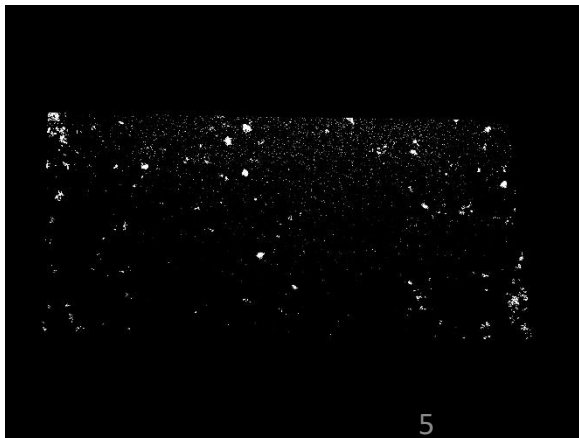
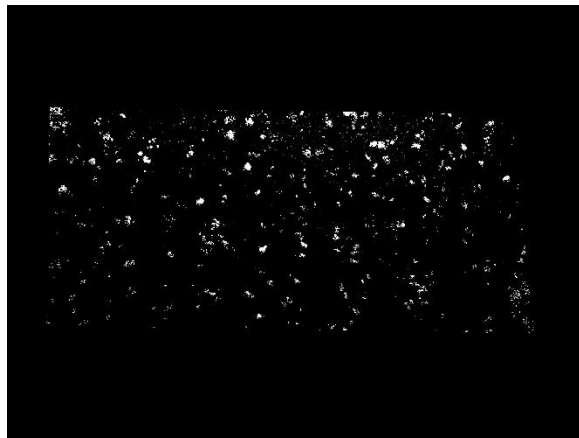
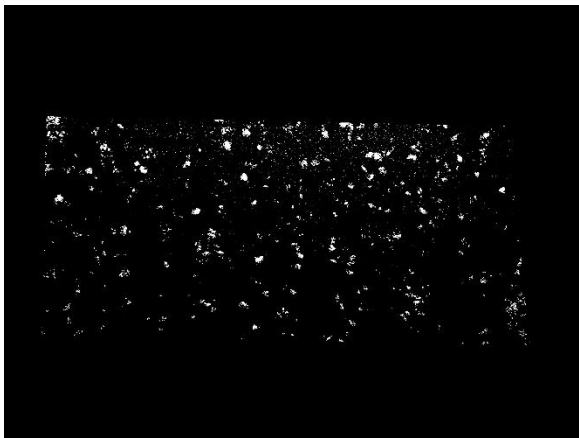
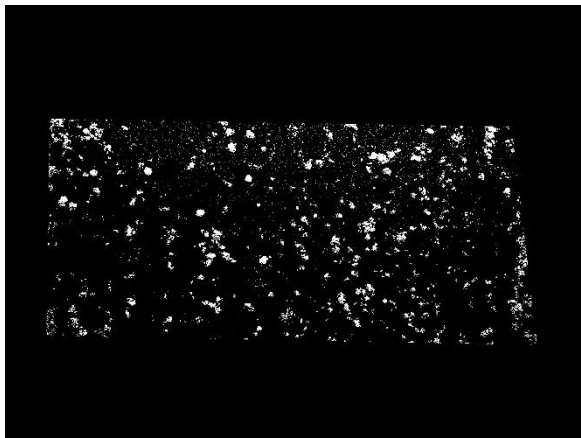
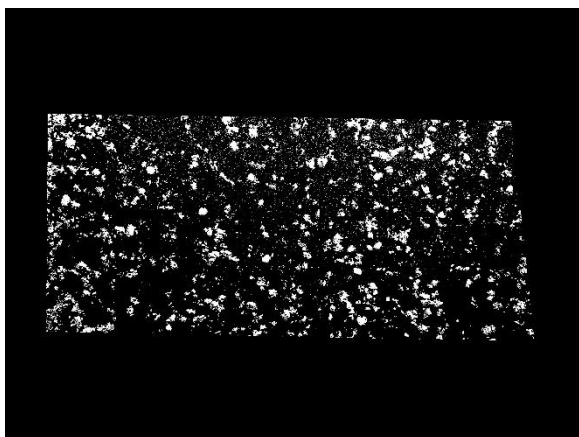
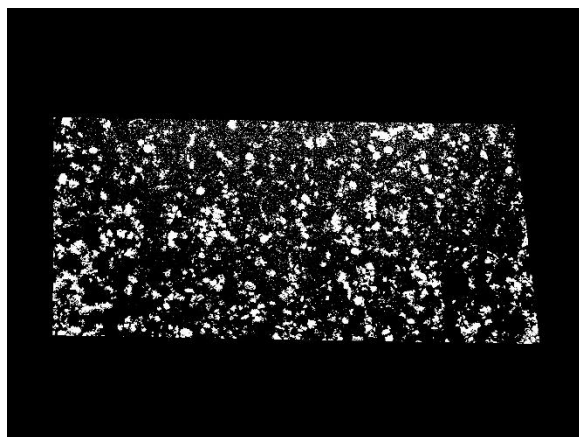
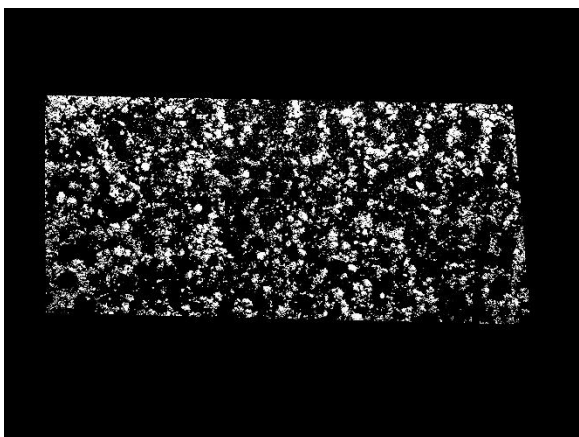
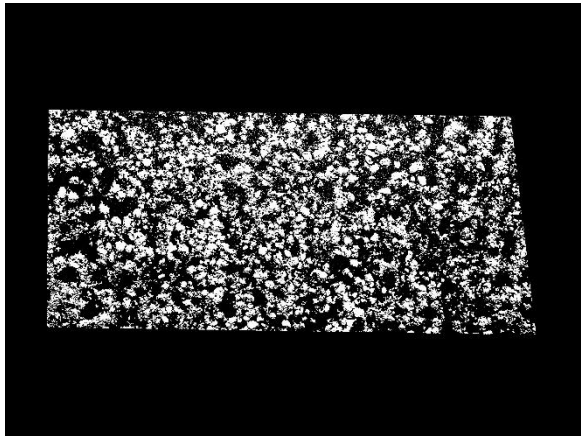
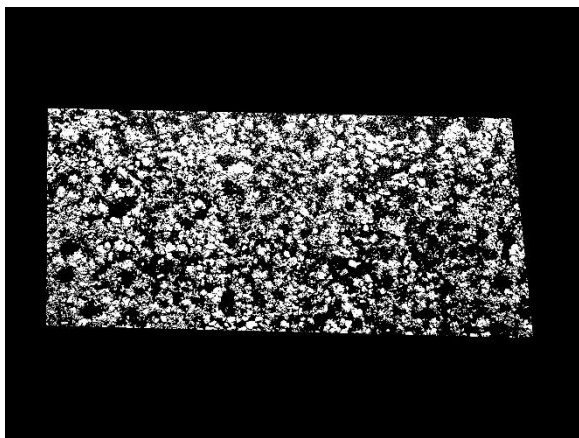
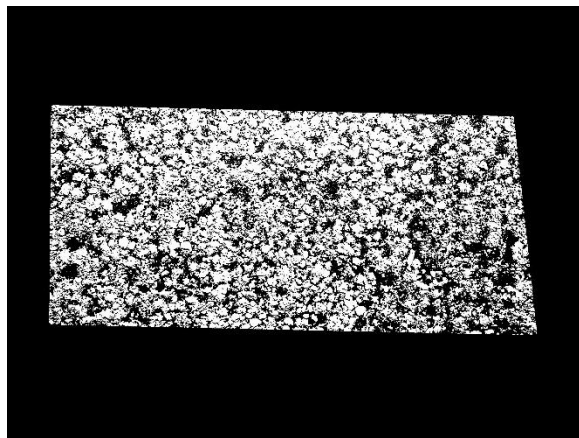
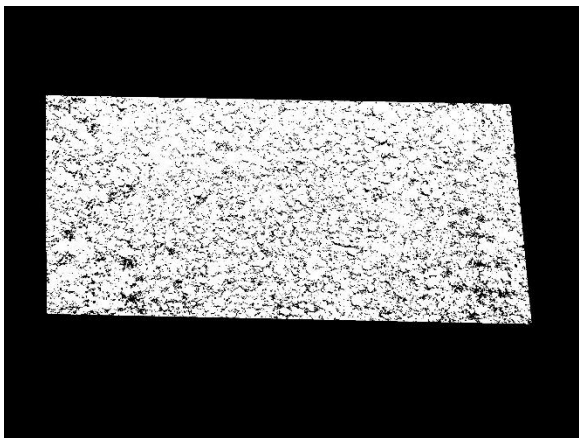
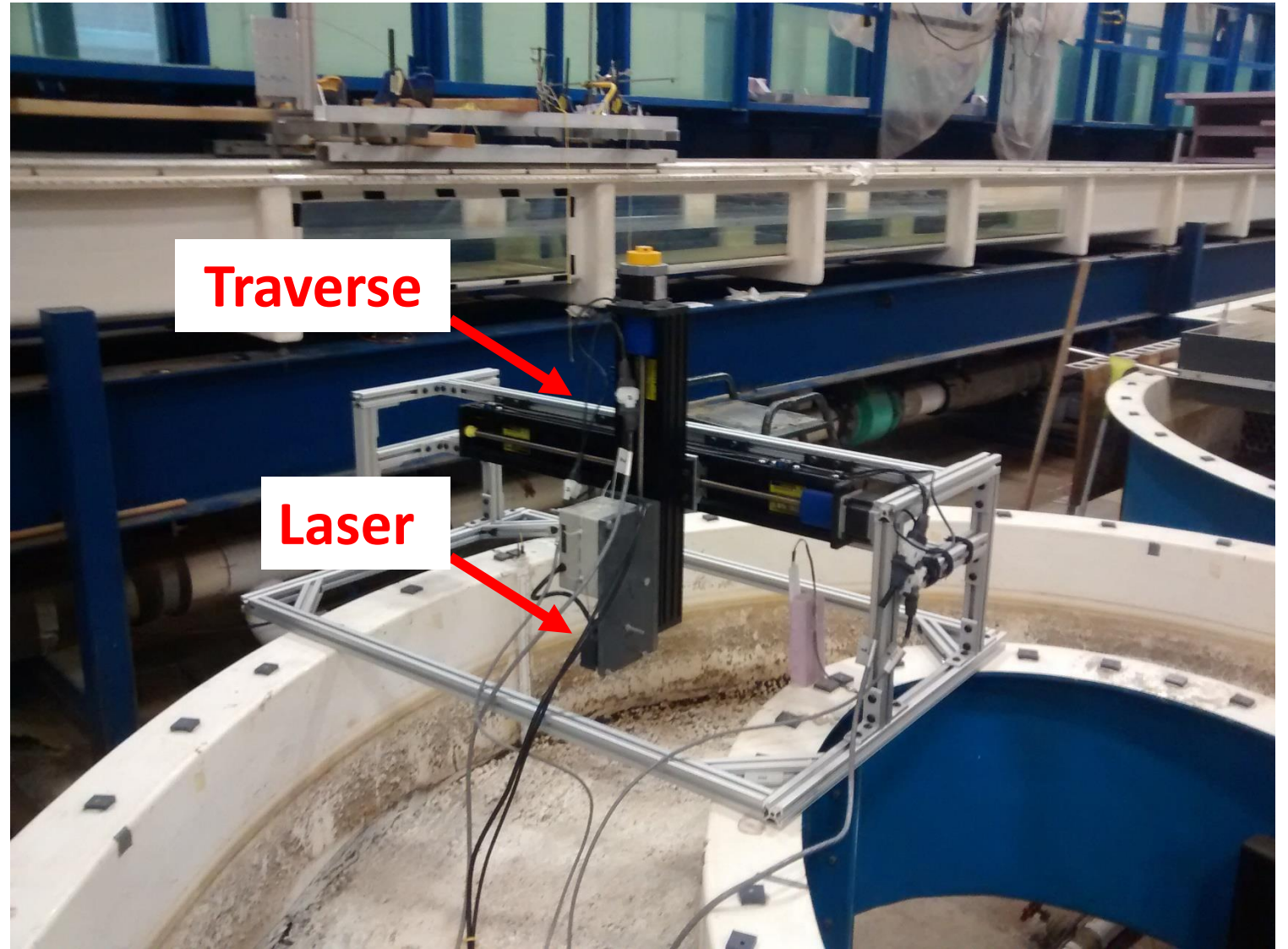


Image of the set up used to scan the bedrock. Same setup shown in the Kinoshita flume was used over the bedrock slab. The laser was connected to a traverse system that scanned the bed with sub millimeter precision.



Example of Kinoshita flume scanned cross section

Image showing the raw signal of bed elevation at CS15, the best fit line (using a 4th degree polynomial), the detrended signal, and the standard deviation of the detrended signal.

