Experiment Description: SHARE 2012 (September)
Input required by June 15th

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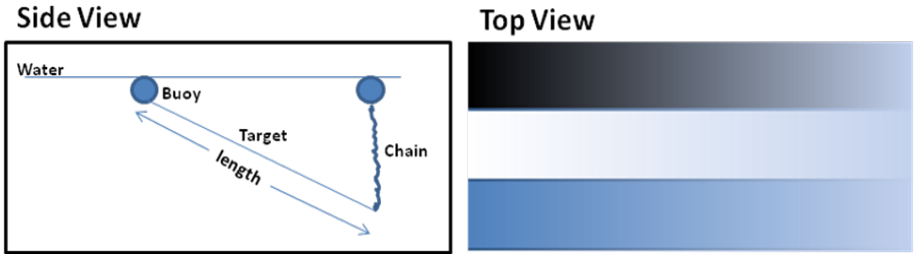
Short Title: *Submerged Object Imaging and Detection*

Objectives: *The first goal of this experiment is to provide a publishable dataset that contains submerged objects. Both subpixel and fully resolvable targets will be deployed to support potential in-water modeling and target detection. Secondly, the proper removal of glint is necessary for the detection of underwater objects. Traditional glint removal methods leave artifacts that may confound target/anomaly detectors. The second objective of this work is to investigate methods that enhance the glint removal process.*

Deployments: *A figure of the anticipated primary target is shown below. Three panels (each approximately 8'x24') will be submerged from 0m-3m to enable the characterization of target "detectability" as a function of depth. The panels will be secured in tandem on a pvc frame and kept buoyant with buoys placed at the corners of the frame. Existing dark and light fabrics will be used to provide a hard edge and a screen (or similar material) will be painted in an attempt to match the water's color.*



The secondary targets (shown below) will be placed in the water at depth and will serve as a subpixel target dataset. Weights/anchors are required to submerge these objects. A boat will be required to deploy all objects.

Finally, a dark and bright calibration panel to enable an ELM correction should be placed on the pier.

Flight Lines: *The proposed flight lines over Conesus are sufficient to support this experiment. Two flight lines are required; one that is designed to minimize glint effects and one that includes glint effects.*

Flight Constraints:

The flight lines should be designed such that one includes glint and one avoids glint.

Ground Truth Required:

Ideally (but not required), ground truth measurements of calibration panels and primary panels would be taken at time of overpass.

Equipment:

The primary target will require about 215 feet of 2-inch PVC piping, as well as four 2-inch PVC slip elbows and twelve 2-inch PVC slip tee's. It will also require four inflatable vinyl buoys of a 9" diameter.