

Current Topics of Research Conducted at Colorado State Hydraulics Lab

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Abstract. With over one million dollars in annual contracts, and projects ranging from numerical modeling to performance testing, the hydraulics lab is a very busy and diverse place. The hydraulics lab is located at the Engineering Research Center on the Foothills Campus of Colorado State University (CSU).

The hydraulics lab at CSU is an ideal place for hydraulic testing. Water is provided from the nearby reservoir at pressures as high as 110 pounds per square inch. Indoors, a variety of flumes are used to conduct studies on riprap, pier scour, calibrations and large physical models. Outdoors, facilities are available to test large-scale models and a variety of performance testing. The indoor lab is equipped with a multitude of sumps and pumps, which allow for sediment re-circulation as well as water re-circulation for many flumes. Water is delivered to the outdoor facilities via a pipeline from the nearby reservoir. Discharges as high as 160 cubic feet per second are obtainable without the use of pumps.

A wide array of instrumentation is used to document testing. Hydraulic and geometric data can be recorded in three dimensions and real time. Direct volumetric flow measurements within ± 3 percent are possible for each facility, utilizing a variety of equipment.

The lab staff includes: undergraduate students, graduate students, professors and is supported by a professionally staffed fabrication shop. Additionally, staff is available to perform field evaluation and field monitoring of sites across the country. These features provide an excellent arena to conduct hydraulic research.