CE 597D Water Resources Seminar

Friday April 2, 2004

Stavely Conference Room—202 Hammond Building

12:00-12:15 REFRESHMENTS

12:15-1:15 SEMINAR PRESENTATION

"APPLICATION OF PARTICLE IMAGE VELOCIMETRY

TO THE

HYDRAULIC JUMP"

Justin Lennon, MS Candidate

ABSTRACT: Hydraulic jumps are regions of rapidly varied flow connecting supercritical and subcritical free-surface or interfacial flows. The jumps arise in a variety of natural and engineered environments and are characterized by intense mixing, turbulence and aeration. Initial research into hydraulic jumps focused on bulk parameters such as roller and jump lengths and depth ratios. Subsequent research began to investigate the mean and turbulent flow fields through the use of pitot tubes, hot films and acoustic and laser velocimeters. The present work investigates the application of Particle Image Velocimetry to hydraulic jumps with two main goals. The first goal is to see to what degree the relevant technical challenges, such as two-phase flow field, can be overcome. The second is to provide an extensive and spatially dense set of data on mean and turbulent flow characteristics.

Moderator: Kris Sedmera
Refreshments: Megan Walsh

Suggested reading is available on the ANGEL seminar site.