JOHNS HOPKINS
Center for Environmental
& Applied Fluid Mechanics

Weekly CEAFM Seminar: Spring 2013

Date: **Friday, May 10, 2013 (Special Date)**

Time: 11:00 AM

Location: Latrobe Hall # 106 **(Special Location)**

Speaker: **PROF. YOSHINOBU TSUJIMOTO** (Osaka University, Japan)

Title: ***"CAVITATION INSTABILITIES IN PUMPS AND TURBINES"***

Abstract

Cavitation instabilities in pumps and hydro-turbines are explained focusing on the cause of instabilities. In pumps, most of cavitation instabilities occur even at design point where the pump head is not significantly decreased by cavitation. This can be explained by the fact that the cavity volume decreases when the upstream flow rate is increased. However, the cavitation instability can occur also when the head is decreased by cavitation. In this case the instability is caused by the positive slope of the head-flow characteristics. In hydro-turbines, cavitation instabilities occur when the flow rate is higher or lower than the design flow rate. This is explained by the pressure recovery effect of the draft tube. These mechanisms are explained by using theoretical models, experimental and CFD results.