

Project: PAR3D Numerical Flow Model

PI: Robert S. Bernard

Branch/Group: Inland Hydraulic Structures Branch

Project Description/Activities/Capabilities:

This model is sponsored by the Chicago District in support of efforts to design and develop an aeration system for the proposed McCook Reservoir. The model itself is a general-purpose three-dimensional flow solver for subcritical hydrodynamics, with added capabilities for modeling turbulence, bubble plumes, heat transfer and transport, gas transfer and transport, sediment transport, and biochemical- and sediment-related oxygen demand. Participants in this project are ERDC/WES, the Chicago District, the University of Minnesota, and the University of Illinois. The PAR3D modeling package is available, subject to sponsor approval, from the Chicago District Office. Prospective users should contact Ms. Heather Henneman, CELRC-TS-HH-HH, 312-846-5514.

Sponsor: Chicago District. POC – Ms. Heather Henneman

CHL Personnel

Robert S. Bernard, Steven C. Wilhelms, Laurin Yates, Calvin Buie

Project Location and Description:

Facilities:

Related Topic Areas

Surface waters, reservoirs, rivers, channels, bubble plumes, gas transfer, water quality, numerical models, incompressible flow, buoyant flow, subcritical flow, turbulence modeling, parallel processing

