



Published on *CD-adapco* (<http://www.cd-adapco.com>)

[Home](#) > Deep & wide - CFD in civil engineering

Deep & wide - CFD in civil engineering



Presented at the STAR Global Conference 2012

Three-dimensional CFD simulation is increasingly achieving acceptance for a wide range of applications in civil engineering. A brief overview is given by means of projects from a variety of backgrounds that have been worked out within the past year.

From the tap to the drain! This is the basic picture we have of our water supply cycle. Just the experts know about the reverse of the complex systems behind these two interfaces like waste water treatment and fresh water supply.

VoF enables us to provide an extensive insight into what is behind tap and drain. Extensive ductwork upstream and downstream from these interfaces waits to be analyzed and optimized. 3D CFD analysis is progressively gaining acceptance to look into these complex systems in detail.

So far, as just empirical techniques and 1D methods have been deployed to design these extensive systems, the first need after putting them into service was to optimize certain sections or components. With increasing capabilities, extended features and almost unlimited supercomputing resources 3D CFD analysis has drawn the water experts' attention. Both, component and system evaluation become substantial parts in digital engineering regarding the water supply cycle. Filling, splitting and blocking as well as pressure profiles are points of interest in modelling large systems.

The performance of a system is tied up to the capacity of its components and a back-up of liquid within certain sections can cause serious and expensive damages. Control and measuring devices sensitive to liquid have to be placed at secure locations to avoid flow exposure. As air is carried along with the waterflow, locations for venting can be identified easily based on the CFD results.

Author Company:

Gruner AG

Author Name:

Raphael Brügger

Erwin Schnell

Industries:

Building Services^[2]

Products:

Conference:

STAR Global Conference 2012^[3]

CD-adapco is the world's largest independent CFD focused provider of engineering simulation software, support and services. We have over 30 years of experience in delivering industrial strength engineering simulation.

Source URL: <http://www.cd-adapco.com/presentation/deep-wide-cfd-civil-engineering>

Links:

[1] http://www.cd-adapco.com/sites/default/files/Presentation/Building2_Gruner_ES_RB.pdf

[2] <http://www.cd-adapco.com/industries/building-services>

[3] <http://www.cd-adapco.com/conference/star-global-conference-2012>