DHI South American seminar tour 2017
- Full details

This year, the DHI seminar and user group meeting (UGM) tour went through Bogotá, Lima, Santiago and Buenos Aires. More than four hundred people signed up for these one-day seminars addressing local challenges in water environments and learnt about adapting DHI's water modelling technology and know-how to solve these problems.

Since the first seminar and UGM tour in South America back in 2007, these events have proven to be unique platforms for our users to meet and network with other professionals and DHI experts. The sharing of interests in addressing and solving problems related to water allow insights into how these are being dealt with by governmental institutions, public utilities, research and educational institutions, consultants and industries. At the same time, these events provide an opportunity to stay on track with the latest developments in the MIKE Powered by DHI software family and innovations made in methods and solutions provided by DHI.

The outline for the 2017 seminars held in March and April were a plenary session in the morning and in the afternoon, the participants were split into parallel sessions on coasts & ports, climate change and water in mining.

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In the welcome address, Robin Marc Dufour, Managing Director of DHI Peru, encouraged the participants to engage, network and inspire one another with ideas. This informal setting with the opportunity for social networking is one that we aspire to achieve at all our seminars.


Alejandro Lasarte, DHI Business Development Manager for Latin America set the scene with a short introduction to DHI and the MIKE water modelling technology. Thereafter, the participants introduced themselves, their area of interest and described the challenges with water they are facing.

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Martín Marazzi, DHI agent in Argentina, with the participants who were introducing themselves and their areas of interest.

Alejandro Lasarte, DHI Business Development Manager for Latin America explains how the software product MIKE OPERATIONS empowers users with technology for building data management systems, real-time forecasting and operational control capabilities for river basins, cities and marine environments.

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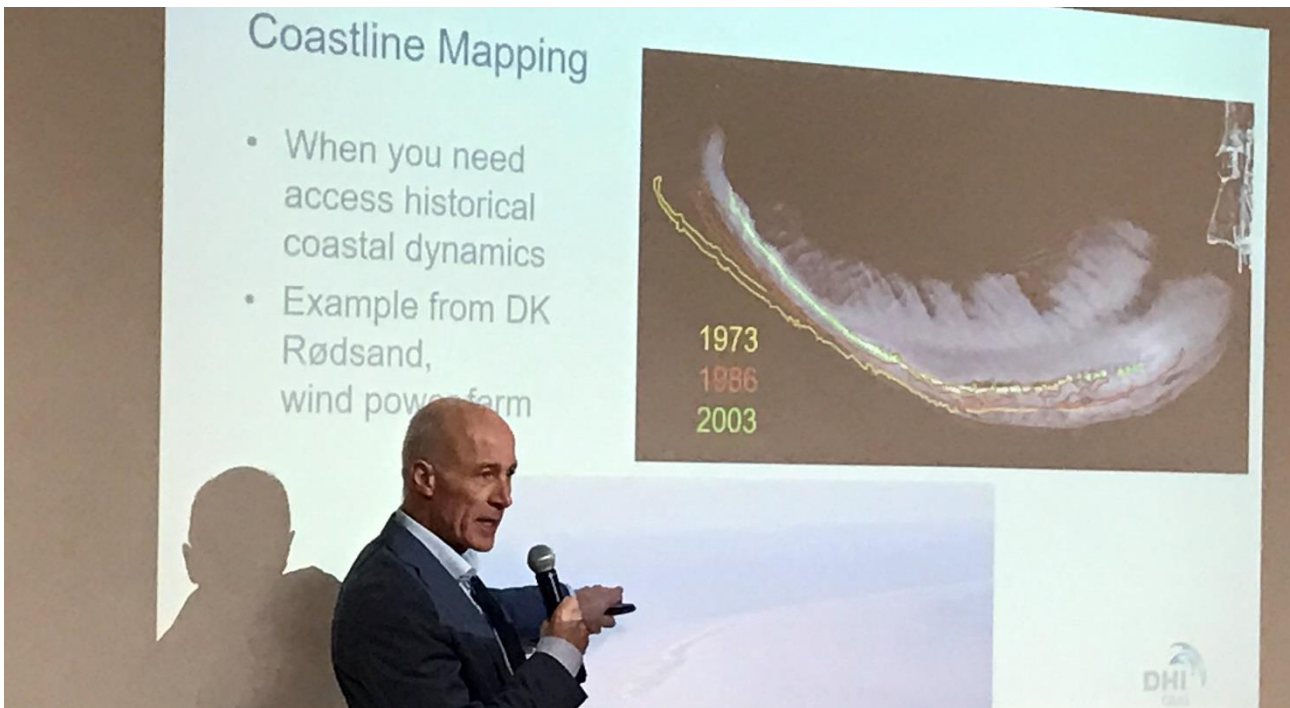
Bo Mogensen, Regional Sales Manager, DHI gave a talk on when and how you can benefit from using remoting sensing data in your work, with examples of available satellite images, DEM and added services. Since 2000, more than 150 projects in some 50 countries worldwide have been completed by DHI GRAS, further strengthening DHI's capabilities in remote sensing for hydrology, water quality, environmental assessment and land cover mapping.

Coffee break and networking.

User presentations

Dr. Carlos Molano, Universidad de los Andes y Hidrogeocol S.A. shared his personal, professional and academic experiences in relation to modelling of groundwater flow and contamination of aquifers in Colombia.

MSc Luis Camilo Suescún Casallas, independent consultant, made a presentation about the calibration and numerical simulation of the G Mining project using FEFLOW 7.0 to resolve the complex geological and structural configuration.

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Raul Ortiz, General Manager, FloSolutions Peru, took the participants through the steps in building conceptual hydro-geological models in complex environments with the information on rocks, soils and groundwater that characterise a particular site.

Ismael Hormazabal, Managing Director of Oceangreen Group Peru & Chile, gave a presentation on how climate change effects on sea level rise and wind conditions may affect the design wave conditions in near shore studies.

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Chile:

Pablo Reche, Investigator, The Institute for Fisheries and Aquaculture Research (IFOP), Chile, shared how the implementation of DHI modelling technology helped them meet the need for ensuring a long-term aquaculture production and preserve natural resources at the same time. Read more at https://www.dhigroup.com/global/news/2017/05/ensuring-sustainable-aquaculture-production-in-chile

Cecilia Zelaya Gómez, Head of the tsunami modelling section at SHOA, the Hydrographic and Oceanographic Service of the Chilean Navy, showed some examples how they have used both the classic and flexible mesh version of MIKE 21 hydrodynamic module to model tsunamis released by subsurface plate movements as well as landslides.

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Eduardo Javier Munoz Queupumil, software developer at DHI, shared how it is to be a member of the development team and gave some examples on how his background in mathematics helped him optimise the MIKE Powered by DHI software.

Argentina:

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Leandro Kazimierski, MSc student at the University of Buenos Aires presented a study with the National Institute of Water, INA, Argentina, about flooding in urban catchments and influence of the water balance conditions in the catchment.

Julio Cardini, Chief Engineer, Serman & Asociados, Argentina gave a presentation on hydrological and hydraulic modelling of the Lujan river basin applying MIKE SHE/11 Enterprise to optimise flooding mitigation works.

Vartush Akaprahamyan, Estudios y Proyectos, Argentina, used MIKE URBAN to study if the capacity of the storm water collection network system in the city of Lujan had an influence of the recent flood levels experienced with the overflow of river Lujan.

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Pablo Liberini, Municipality of Buenos Aries and Miguel Altube, Autotrol, Argentina, presented the SIVHIGILA project - a hydro-meteorological online monitoring and flood forecast system for Buenos Aires, which uses MIKE OPERATIONS and MIKE URBAN software.


Gabriel Danieli, Ezcurra & Schmidt, Argentina showed some examples of using the MIKE 21 Boussinesq Wave model in port studies in South America (photo from 2015 seminar).

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Parallel sessions – topics

Ports & Coastal

In the Ports & Coastal session, Poul Kronborg, Global Sales Executive, Marine Infrastructures & Marine Software Products, DHI gave an overview of the marine modelling suite, the news that follows the latest release of the MIKE Powered by DHI software, and a demonstration of the new mooring analysis module MIKE 21 Mooring Analysis (MIKE 21 MA). MIKE 21 MA solves the equation of motion for the floating vessel in all six degrees of freedom (surge, sway, heave, pitch, roll, and yaw) in the time domain. Vessel response is calculated based on the exact 3D model of any vessel hull geometry. Wave diffraction forces are calculated from non-linear, non-uniform incident wave fields or flow fields produced by MIKE 21 HD and BW. The model couples directly with MIKE 21 HD and BW – there is no loss of accuracy.
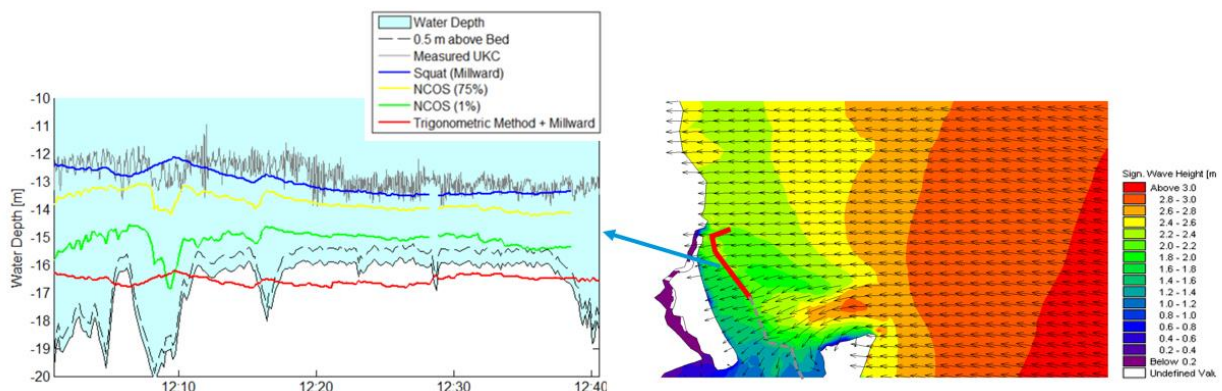
La validación confirma que NCOS calcula una estimación muy precisa del UKC del buque

All photos © DHI

Bo Mogensen, DHI, presented a case study from Port of Brisbane where DHI and FORCE Technology have applied the jointly developed software package supporting a novel approach to design and optimisation of navigation channels, named the Nonlinear Channel Optimisation Simulator (NCOS).

NCOS was used in order to perform a comprehensive channel capacity optimisation assessment based on hundreds of thousands of time domain simulations of several years of vessel traffic, subject to historical temporally and spatially varying tidal levels, currents, waves and wind conditions. NCOS utilises the combined strengths of detailed wave and hydrodynamic modelling and the accurate physical description of powered vessel response provided by ship navigation simulators conventionally utilised to train pilots and mariners.

An operational system has been implemented, implying that the Port of Brisbane now can call larger container ships and other types of carriers with higher draft without having to deepen the navigation channel and still meet the safety requirements.

Climate Change

In the climate change session, Alejandro Lasarte, DHI Business Development Manager for Latin America, examined inland waters, 1D and integrated 1D & 2D approaches in flood modelling, optimisation of reservoir management, non-newtonian fluid modelling in connection with failure of tailing dams.

He also introduced some of the new features in the water resource and urban software packages and explained about the new web based solution for water supply and water distribution analysis, the WaterNet Advisor, which will enable you to make better and faster decisions in the field, and radically improve the way you manage your daily operations.

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Water in Mining

In the Water in Mining session, Robin Marc Dufour, Director of DHI Peru and Senior Hydrogeologist gave examples of how DHI has helped mining companies reduce their Opex & Capex costs in dewatering operations as well as a walk-through of some of the new features and improvements in FEFLOW.

For example, further consolidation and optimisation of 3D mesh operations, enhanced engine performance, improved and extended calibration features in FEPEST, and the new coupling option that integrates the two state-of-the-art groundwater model FEFLOW 7.1 and surface water model MIKE 21 Flow Model FM (MIKE 21 FM) into a single, dynamically coupled modelling system.

TESTIMONIALS

'A necessary space to interact with public and private local users, and get to know the senior modellers and their experiences which allow us to resolve our concerns.'

– Luis Camilo Suescún Casallas, private consultant, Colombia

'I think it was an excellent seminar.'

Sophia Moyoli, Nippon Koei LC, Peru

'I recommend this seminar.'

– William Homero Bardales, WSP Peru

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'The presentations were interesting and relevant.'
– Robert Berrocal, CESEL S.A. Peru

'Very interesting seminar for the topics discussed.'
– Pedro Grados, SEDAPAL, Peru

'The seminar and form was very interesting and the interaction with participants exchanging information was very positive – a success!'
– Rolando Bustos, SSPYVN – Subsecretariat of Ports and Waterways, Ministry of Transport, Argentina

'Very interesting to get an update on available tools and about latest as well as future developments.'
– Gerardo Bessone, The management consortium of the port of Bahia Blanca, Argentina