

QUT showcases 4D technology at world's biggest meeting of geological minds

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With resource exploration and mining being a key focus of the world's biggest geological congress currently underway in Brisbane, Queensland University of Technology (QUT) will showcase in-house developed software that helps better understand how subsurface groundwater systems behave.

QUT Science and Engineering Faculty Professor Malcolm Cox and his team have developed GVS (Groundwater Visualisation System), which has been specifically designed to represent groundwater systems and associated data, including drillholes [water chemistry](#) and surface connections.

"Aquifers can be very complex systems that are traditionally represented using 2D maps," Professor Cox said.

"We have now developed 3D visualisation formats to display these systems, and also a representation of a fourth dimension - time, using animation.

"The system has been applied to a wide range of land types from sand islands to irrigated catchment-wide systems and regional sedimentary basins hosting coal seam gas resources.

"GVS can be used to visualise any existing geological and hydrogeological data and analyse the processes that are going on.

"This greatly improves our understanding of groundwater systems and how they function.

"With this technology we are able to show which aquifers individual drillholes are accessing, plus any variations in water levels and relations to surface conditions."

Professor Cox said the GVS could show how measurements and water levels behaved or changed over time and could be related to [climatic variations](#) and land use.

He said the information the technology could provide would benefit various resource managers, farmers and communities as well as governments.

The GVS was developed using open-source software and more information can be found at www.isr.qut.edu.au/gsr/gvs/index.jsp

Professor Cox will present his research to the [congress](#) at 1.45pm on Friday in the Plaza Terrace Room of the Brisbane Convention and Entertainment Centre while GVS staff and their audiovisual presentation will be onsite daily in the QUT booth until 11am.

The 34th International Geological Congress underway in Brisbane has attracted the world's best geologists from all corners of the globe.

Held every four years, the congress offers QUT's scientists and geologists the opportunity to place their latest research and technological developments before the world's biggest meeting of geological minds.

This year's congress is attracting some 5000 delegates from 112 countries.

Provided by Queensland University of Technology

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