Water futures under climate change – science, applications and challenges

21 August 2018, 2.30–3.30 pm (AEDT)
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Water is essential for people to live, grow food, operate industries and sustain a healthy environment. Climate change impacts on water will therefore influence many sectors, including agriculture, natural resource management, infrastructure and biodiversity conservation.

Projections of future water availability and changes to river flows under climate change are needed to assess the potential impacts on these different yet connected sectors, and to plan adaptation options. The challenge in adapting to climate change is compounded by Australia's low proportion of rainfall that becomes runoff (low runoff coefficient), high spatial variability in rainfall and runoff and high inter-annual variability in river flows.

In this webinar, Dr Francis Chiew will present methods and projections of future water availability in Australia. The applications of these projections, and the different water metrics or characteristics that influence water related challenges across Australia, will also be discussed.

The prediction of future water availability relies on climate, hydrological and modelling sciences. The key components include global climate modelling, regional climate modelling (climate downscaling) and hydrological impact modelling. Francis will talk about the challenges and opportunities in modelling and integrating these components, and interpreting and communicating the outcomes to enhance the next generation of hydrological and water projections.

Despite the continuing progress in the science and modelling, there will still be considerable uncertainty in future water projections, and the webinar will conclude with a discussion of potential approaches to incorporate consideration of climate change in water management and planning.

Dr Francis Chiew is a senior principal research scientist in CSIRO Land and Water. Francis leads the Water Resources Assessment and Prediction Group, which focusses on hydrological modelling, water forecasting, climate and land use impacts on water and integrated basin management. The group contributes to global hydrological sciences, and informs water resource planning and adaption in Australia and globally. Francis and his group are also active in converting research outcomes into modelling tools and guidelines for the water industry. Francis is the deputy lead chief investigator of the Earth Systems and Climate Change Hub Project 2.7: *Refining Australia's water futures.*

The Earth Systems and Climate Change Hub science webinars are open to the research community and anyone interested in finding out more about the Hub's research (noting that the content may assume some understanding of climate change science and the fields being discussed).