



## **Delineating the synchronicity of flood and drought events using uncertainty analysis in palaeoflood records**

John Vitkovsky (1), Jacky Croke (2), and Robert Denham (1)

(1) Department of Environment and Science, Queensland Government, Brisbane, Australia ([john.vitkovsky@des.qld.gov.au](mailto:john.vitkovsky@des.qld.gov.au)),

(2) Department of Geography, University College Dublin, Dublin, Ireland ([jacky.croke@ucd.ie](mailto:jacky.croke@ucd.ie))

Over the past decade, the required standard of geochronological data sets has increased considerably with much greater attention now given to the quality of the dated material (radiocarbon/OSL). However, the associated statistical methods employed to ensure their appropriate statistical integrity have remained more or less unchanged. Numerous studies have explored different methods to interpret statistical distributions of geochronological data sets from single or multiple catchments and broader geographic regions. The necessity to report standard error bars seems logical given inherent uncertainties but there is limited real 'use' of the resultant distribution and there seems no way of using this information to help determine improved understanding of the timing of discrete events such as floods. This talk uses a comprehensive data set of over 200 OSL dates obtained from south East Queensland Australia to explore the possibilities of using error bars to better determine the frequency of discrete flood events. It provides a positive contribution to the field of geochronological data interpretation and opens up the possibility of improved certainty in determining flood frequency over time.