

# APSSIM 2016

## Proceedings of the First Asia Pacific Slope Stability in Mining Conference

6–8 September 2016, Brisbane, Australia

*Editor*

**Phil Dight**

Australian Centre for Geomechanics, Australia



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# Australian Centre for Geomechanics

The Australian Centre for Geomechanics was formally established in 1992 as a University of Western Australia research centre in order to promote research excellence and continuing education in geomechanics, with particular emphasis on its application to the mineral and energy extraction sections of Australia's resource industry.

The Australian Centre for Geomechanics is an unincorporated Joint Venture involving:

- CSIRO Earth Science and Resource Engineering
- The University of Western Australia — School of Civil, Environmental and Mining Engineering

The Centre draws together its staff knowledge and experiences with the expertise within the two groups forming the Centre and facilitates a multi-disciplinary approach to research and education in geomechanics. Research undertaken by the ACG attracts both national and global support and the outcomes of the projects are utilised to promote safer mining and environmental geomechanics practices, operating efficiencies and to meeting community expectations for sustainable mining practices.

With the guidance of strong industry representation on the Board of Management, and close collaboration with senior representatives of the mining industry, research, training and further education activities are tailored directly to the needs of industry. The ACG Board expects the Australian Centre for Geomechanics to be the focal point for industry on geomechanics issues and to address the needs of industry through a collaborative interdisciplinary approach.



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The dedicated efforts of the peer reviewers have resulted in the high quality of the technical programme and the papers compiled for this publication. The editor thanks the following people who contributed their time and expertise as reviewers of manuscripts for the proceedings of the First Asia Pacific Slope Stability in Mining Conference held in Brisbane, Queensland. A technical and critical review of each paper was undertaken by a minimum of two reviewers for the production of this volume.

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# Preface

The First Asia Pacific Slope Stability in Mining Conference was held in Brisbane, 6–8 September 2016. The focus of the conference was to draw in operations, which face challenging conditions due to their climate, location, material types and management of slope instability risks.

The proceedings includes 56 technical papers from authors working in many countries. Particularly encouraging has been the participation from Chile, Thailand, USA, Indonesia and New Zealand, which border the Asia Pacific.

The opening address by Mark Adams, KAAMA Consulting Pty Ltd, set the scene. There were six excellent keynote speakers.

Topics covered applications in coal and metalliferous mining and addressed hydrogeology, blasting, monitoring, weak and saprolitic materials and risk management with many case studies.

There were two workshops that occurred. These covered instrumentation, and remediation of slopes.

I wish to acknowledge the support and stewardship, of the conference development, by my colleague at the ACG, Dr Johan Wesseloo during my absence.

The technical program was prepared as a true collaborative effort between the members of the Technical Advisory Committee and the Australian Centre for Geomechanics. The outstanding contribution of all parties is sincerely acknowledged.

Phil Dight  
Conference Chair



## Conference Sponsor

The Australian Centre for Geomechanics is pleased to acknowledge the generous contribution by the principal sponsor of the First Asia Pacific Slope Stability in Mining Conference.

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