Proceedings of the 2023 Mathematics in Industry Study Group

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1 Preface to the Proceedings

The 2023 Mathematics in Industry Study Group was held at the campus of Monash University, Melbourne, Victoria from January 30th until February 3rd, 2023. There were 4 problems considered by the groups.

At the end of the study group, reports were written on each problem. Those peer reviewed reports are in this issue of the Proceedings of ANZIAM, available on this page.

The MISG is a special interest meeting of ANZIAM (Australia and New Zealand Industrial and Applied Mathematics) a Division of the Australian Mathematical Society. The MISG meetings take place annually and provide a forum where projects proposed by industry can be worked on over a week by a collection of Australian and International scientists in Applied Mathematics, Statistics and Engineering, along with representatives from the different industries.

The papers were written by the project coordinators in collaboration with the Industry representatives and other members of the group that worked on the problem. The papers were then reviewed and copy-edited before publication. In 2023, there were four problems presented by industry.

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2 Problems

At MISG2023, there were four industry projects. The industry partners, problems and moderators were;

1. The Australian Energy Market Commission (AEMC), *Mathematically enhanced standards for a future of reliable renewable energy*,
   Project moderators:
   - Mr Craig Oakeshott (AEMC rep.)
   - Dr Kihun Nam (Monash)
   - Prof David Hill (Monash/USyd/HKU)
   - Ms Ya Li (Monash)
2. Sun Cable, *Thermal performance of subsea power cables with marine growth*,
   Project moderators:
   - Dr Joseph Bunton (Sun Cable rep.)
   - Dr Anja Slim (Monash)
   - Prof. Graeme Hocking (Murdoch)
   - Dr Edward Hinton (Melbourne)
3. Costa Group, *Mathematical modelling of tomato greenhouse resource management*,
   Project Moderators:
   - Mr Tal Kanety (Costa rep.)
   - Dr Mark Flegg (Monash)
   - Prof. Mark McGuinness (VUW)
   - Dr. Jessica Crawshaw (Oxford)
4. NSW Health, *Optimising hospital waitlist and operating theatre management.*
   Project moderators:
   - Ms Karen Berry (NSW Health rep.)
   - Dr Michael Lydeamore (Monash)
   - Prof. Andreas Ernst (Monash)
   - Dr Hamideh Anjomshoa (Melbourne)

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