















































- 
- [14] Mathworks, I. (2018). MATLAB Software Ver. 9.4.0.813654 (R2018a).
- [15] Opoku, S. and Musingwini, C. (2013). Stochastic modelling of the open pit to underground transition interface for gold mines. *International Journal of Mining, Reclamation and Environment*, 27 (6), 407-424.
- [16] Ordin, A. A. and Vasil'ev, I. V. (2014). Optimized depth of transition from open pit to underground coal mining. *J Min Sci*, 50 (4), 696-706.
- [17] Roberts, B., Elkington, T., van Olden, K., and Maulen, M. (2013). Optimising combined open pit and underground strategic plan. in *Mining Technology*, vol. 122: Maney on behalf of the Institute and The AusIMM, pp. 94-100.
- [18] Whittle, D., Brazil, M., Grossman, P. A., Rubinstein, J. H., and Thomas, D. A. (2018). Combined optimisation of an open-pit mine outline and the transition depth to underground mining. *European Journal of Operational Research*, 000 1-11.