APCOM 2003
31st International Symposium on
Application of Computers and Operations Research in the Minerals Industries

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Foreword

This volume contains the Proceedings of the 31st International Symposium of APCOM (an acronym for Application of Computers and Operations Research in the Minerals Industries). The Symposium returns to South Africa after 16 years. The last one was held in Johannesburg in 1987.

APCOM was founded back in 1961 by four universities in the USA, namely the University of Stanford, the University of Arizona, the Pennsylvania State University and the Colorado School of Mines which became the initial permanent members of the Council. The aim was to promote the application of computers and operations research in the minerals industries. These fields were both relatively new at the time and in particular, access to expensive computers was limited due to the cost involved. The first Symposium was held in 1961 at the University of Arizona and had a predominant national and academic character. Since then APCOM has grown in stature and importance and now represents a unique international forum where significant original contributions and emerging or state-of-the-art technologies in all fields of the minerals industry are presented, discussed, criticized and shared by practitioners as well as academics from all over the world. The composition of the International Council has also changed and expanded through the years and now consists of four USA Institutions (Colorado School of Mines, SME, Pennsylvania State University and the University of Arizona) as well as the Royal School of Mines in London, the Canadian Institute of Mining and Metallurgy, the Moscow Mining Institute, the Australian Institute of Mining and Metallurgy, the Technical University of Clausthal in Germany, China University of Mining and Technology and the South African Institute of Mining and Metallurgy. Other institutions are added to the Council from time to time on a non-permanent basis.

The world has undergone remarkable changes during the last decade of the past century and it has now become a global village where sharing of information, the development and adoption of innovative technologies, transparency and competitiveness are paramount requirements for the survival of the mining industry. Computer methods are already an integral part of all aspects of the mineral industry and will play an even greater role in meeting the challenges facing the industry in the 21st Century. The book contains in excess of 90 papers by authors from all over the world, selected for presentation at APCOM 2003. The programme of the Symposium represents a balanced mix of the traditional areas of exploration, mining, geostatistics, production planning, metallurgy and scheduling as well as the emerging areas of information technology, market trends, e-commerce, e-learning, neural networks, graphics and geological information systems.

I am very grateful to the Organizing Committee and the International Council of APCOM for having decided to dedicate this Symposium to Prof. D.G. Krige. Prof. Krige is one of the greatest researchers in the field of valuation of mineral resources. His activities and contributions in this field span a period of 60 years and are still continuing today. The grade interpolation procedure which was initiated by him and which was mathematically refined by Prof. Matheron, who named it ‘kriging’, is now applied world-wide in mining and many other fields. It is a great honour for South Africa, the Organizing Committee and the International Council of APCOM to have Prof. Krige present at APCOM 2003 in Cape Town.

A noteworthy and pleasing aspect of the Symposium has been the generosity of the substantial list of sponsors and the large participation of exhibitors for which I am very grateful. On behalf of the International Council of APCOM, I would like to extend my appreciation to the South African Institute of Mining and Metallurgy under whose auspices the Symposium has been held, the authors, referees, the secretariat, typesetters, editors, programmers, printing personnel, and each session chairman. A particular word of thanks goes to the members of the Organizing Committee who also acted as referees, for their continuous support, dedication and loyalty during the preparation of this Symposium which required more than two years of extensive planning.

Finally, on behalf of the Organizing Committee I would like to convey a warm welcome to all delegates, and I hope that foreign visitors will use this opportunity to enjoy the beauty and diversity of South Africa and especially the ‘Mother City’.

Ferdi Camisani-Calzolari
Chairman,
Organizing Committee


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