





The SAIMM, GSSA and GASA present the





CAPE TOWN, SOUTH AFRICA 21–23 OCTOBER 2009

Second Circular and Registration Form

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THE TABLE BAY HOTEL, CAPE TOWN, SOUTH AFRICA 21–23 OCTOBER 2009

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Second Circular





Join us in Cape Town, South Africa

on behalf of the Organising Committee it is my pleasure to invite you to join us at the southern tip of Africa for the 2009 Fourth World Conference on Sampling and Blending (WCSB4). The three-day conference offers a wonderful opportunity for sampling practitioners from around the globe to present, meet, network and learn.

WCSB4 will appeal to all who are involved in sampling and will accommodate those who wish to learn more about developments in the theory of sampling as well as those who are more interested in practical applications. As with the previous WCSB conferences, delegates will represent a wide range of disciplines from the mining community, academia, industry, agriculture, environmental sciences and other sectors.

The WCSB4 technical programme will cover a wide variety of sampling topics in the form of poster and oral presentations delivered by authors coming to Cape Town from South America, Africa, Europe, Australasia and the USA. The programme will include a keynote address on each day presented by international experts in their respective fields of sampling, and an interactive discussion session is planned for the final day of the conference. The Organising Committee aims to have a hard copy of the proceedings available to delegates on registration.

WCSB4 is an ideal opportunity to update oneself on international developments in sampling and will enable exploring practical solutions to sampling challenges and exchange ideas with fellow delegates, independent consultants and academics. The conference offers delegates an opportunity to gain new ideas to improve their sampling practice.

A short course aimed at improving levels of understanding of the theory of sampling and encouraging best practice will be held prior to the conference. I encourage all delegates to register for this worthwhile learning opportunity.

The WCSB4 website will continue to be updated with information about the conference and courses as well as providing links to useful sites for accommodation and other activities that may be of interest to visitors to Cape Town (http://www.wcsb4.com/). Requests for additional information to be placed on the website or suggestions for changes to the site are most welcome.

South Africa is one of the most exciting tourist destinations in the world and offers many interesting places to visit including the world famous Kruger National Park or a drive along the Garden Route. Cape Town has two World Heritage sites, a fantastic mountain to explore, day drives around the Cape Peninsula or trip to the Winelands. October is our spring which is ideal for surfing, sailing, kite surfing, golf or cycling. The V&A Waterfront is a shoppers paradise and has many restaurants.

We look forward to welcoming you, and sharing our wonderful city with you in October.

Sean Duggan Chairman, WCSB4

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Organising Committee

Sean Duggan (Chairman)

Dick Minnitt (Co-chairman) Fanie Nel
Steve Smithies Chris Prins
Marinda Swanepoel John Cruise

Conference Secretariat

Raymond van den Berg, Conference co-ordinator The Southern African Institute of Mining and Metallurgy

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E-mail: raymond@saimm.co.za · Website: http://www.wcsb4.com

Key dates

Theory of sampling workshop
Conference
19–20 October 2009
21–23 October 2009

Workshop registration fees

SAIMM/GSSA/GASA members R5 500.00

Registration

Registration fees include attendance of the technical sessions, all refreshments and lunches at the conference, and attendance at the cocktail parties and social functions.

Registration fees

Early bird registration fees (on or before 20 July 2009)

SAIMM/GSSA/GASA members or presenting authors	R8 000.00
Non-members	R8 800.00
Students/retired members	R2 500.00

Registration fees (after 20 July 2009)

SAIMM/GSSA/GASA members or presenting authors	R8 500.00
Non-members	R9 400.00
Students/retired members	R2 500.00

All prices include VAT. Tax invoices will be issued to all delegates.

Please note that delegates will be permitted to attend the conference only if their registration fees have been paid in full.





Cancellation

A 50% refund will be given for cancellations received before 21 September 2009. No refunds will be given for cancellations after 21 September 2009.

Exchange rate

The current exchange rate as at May 2009 is approximately US\$ 1.00 = R8.41, £1.00 = R12.85 and Euro = R11.52.

The present rate of VAT (value added tax) is 14%, which is included in the cost.

Conference venue

The Table Bay Hotel is located in the centre of Cape Town's Victoria & Alfred Waterfront and has a perfect view of the world renowned Table Mountain, the yacht bay and the historic working harbour.

The hotel is only a minute's walk from the hub of the Cape's bustle and action, offering some of the finest restaurants, shops, boutiques and galleries found in Cape Town.

During the hotel is situated between Robben Island and Table Mountain.

At day the cool Atlantic Ocean breeze eases the heat of the Africa's mother city and at sundown the buzz of the V&A Waterfront's restaurants, bars and clubs will invite you to take a journey like no other.

Accommodation

Western Cape Tourism

Delegates can book accommodation in the main hotel or alternative hotels situated in close proximity of the conference venue.

Please note that accommodation is for the delegates own account.

Cape Grace Hotel Tel: +27 21 410 7100 Email: info@capegrace.com
The Table Bay Hotel Tel. +27 21 406 5000 Website: www.suninternational.com
Victoria & Alfred Hotel Tel: +27 21 419 6677 Email: res@vahotel.co.za

Breakwater Lodge Tel: +27 21 406-1911
City Lodge Tel: +27 21 419-9450 Email: clva.resv@citylodge.co.za
Southern Sun Hotels Website: www.southernsun.com

Website: tourismcapetown.co.za

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Workshop—19 and 20 October 2009

Preliminary programme

DAY 1

Morning

- Fundamental statistical concepts used in sampling theory and sampling practices
- Introduction to the theory of sampling (TOS)

Afternoon

- A complete review of the in situ nugget effect
- First exposure to Poisson processes
- Review of Gy's preventative approaches

DAY 2

Morning

- Review of Visman's work in sampling
- · Review of Ingamells's work in sampling
- Introduction to single Poisson processes
- Applications to sampling for trace constituents

Afternoon

- Introduction to double Poisson processes
- Applications to sampling for trace constituents
- A logical conclusion: integrating Gy, Visman and Ingamells' work in the TOS
- Conclusion: Gy's preventative approaches are inevitable

WHAT YOU WILL LEARN:

- The nine kinds of sampling ERRORS, how they occur, and how to minimize them; most people can list only two.
- Sampling correctness, so you can reject sampling systems that will never perform a satisfactory job.
- Become familiar with necessary tests to be performed at mines and plants to optimize all your sampling protocols.
- To select appropriate data quality objectives for operating parameters, which are worth continuous monitoring, to minimize your operating cost.
- To better appreciate the value of existing chronological data that allows one to control any process. This data are valuable for managers in identifying structural problems that lead to unnecessary financial losses.





- Variography is the key to identifying the various sources of variability affecting routine chronological data. You will discover the power of chronostatistics.
- Using existing data, variability from sampling and measurement must be clearly separated from process trends and cycles. Unless this is well done, continuous process improvement will remain elusive.
- The careful use of the moving average and especially its auxiliary functions can greatly help one to minimize the effect of poor sampling and measurement precision.
- The relative difference plots can show, unambiguously, the presence of conditional biases from sampling and from laboratories.
- Appreciate the weakness of today's sampling standards that are obsolete and not in keeping with sampling theory.
- Hear the latest developments in sampling discussed WCSB1 (Denmark, 2003) and WCSB2 (Australia, 2005.)

Conference programme: 21–23 October 2009

The technical programme consists of keynote addresses, as well as papers, which have been provisionally accepted:

Preliminary programme

Keynote address: Theoretical, practical and economic difficulties in sampling for trace constituents

F.F. Pitard, Francis Pitard Sampling Consultants, USA

Keynote address: Sampling mineral commodities—the good the bad and the ugly R.J. Holmes, CSIRO Minerals, Australia

Keynote address: Reliable assessment of total errors in sampling large kernel lots: a new variographic approach (theory of sampling)

K.H. Esbensen, Aalborg University, Denmark

and

C. Paoletti European Food Safety Authority (EFSA), Italy

Blending pile design improved: a geostatistical contribution

L.A. Abichéquer, J.F.C.L. Costa, L.N. Capponi, H.A. Pasti, and J.C. Kope, University of Rio Grande do Sul, Brazil

Comparison between alternative belt conveyor primary sampling methods for iron ore H.E. Bartlett, Consultant, M. Nel, Kumba Iron Ore, and R. Steinhaus, Multotec, South Africa

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Reducing coal quality variability with properly designed blending piles

F.S. Beretta, J.F.C.L. Costa, J.C. Koppe, and D.L. Schuster, Universidade Federal do Rio Grande do Sul. Brazil

TOS evaluation of standard sampling valve designs in process technology—apparent reproductibility but fatal accuracy (POSTER PRESENTATION)

L. Boland and K.H. Esbensen, Alborg University, Denmark

Geostatistical estimation and control of the uncertainty on environmental site assessment data

J.-P. Boudreault, J.-S. Dubé, Laboratoire de géotechnique, D. Marcotte[†] Géologique et des mine, and É. Hardy, Qualitas-Quéformat Itée, Canada

Applying the theory of sampling to the environmental sampling of urban contaminated soils: from the field to the chemical analysis

J.-P. Boudreault, J.-S. Dubé, M. Sona, Laboratoire de géotechnique environnementale, and É. Hardy, Qualitas-Quéformat Itée, Canada

The Importance of correct sampling for estimating the mineral resource of an aeolian diamondplacer

J.U. Burger*, Namdeb Diamond Corporation, Namibia, and S.P. Duggan[†], Z Star Mineral Resource Consultants, South Africa

Sampling protocol review of a phosphate ore mine to improve short term mine planning

L. Capponi*, L.A. Pinto e Almeida*, S.B. Cimbranelli*, and R. de Lemos Peroni*, *Fosfértil and †Federal University of Rio Grande do Sul, Brazil

The challenge of sampling gold

A.C. Chieregati* and F.F. Pitard*, *University of São Paulo, Sampling Consultants LLC. Brazil and USA†



Statistics or geostatistics? Sampling error or nugget effect? I. Clark, Geostokos Ltd, Scotland

A preliminary DEM investigation of the conditions for vezin samplers to be unbiased P. Cleary and G. Robinson, CSIRO, Minerals, Australia

Bias of cohesive bulk materials sampled by falling stream cutters P. Cleary and G. Robinson, CSIRO, Minerals, Australia

Solving problems with fine crushing of geological materials I. Devereux and D.F. Bongarcon, Rocklabs Ltd, New Zealand

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Digital image analysis for the determination of the dependent selection of particles in sampling studies

D. Dihalu and B. Geelhoed, Delft University of Technology, The Netherlands

Grab sampling for underground gold mine grade control: a discussion S. Dominy, Snowden Mining Industry Consultants, England

Comparison of laboratory sampling techniques for the chemical analysis of contaminated soils

J.-S. Dubé*, J.-P. Boudreault*, M. Sona*, Laboratoire de géotechnique environnementale, and É. Hardy[†], Qualitas-Quéformat Ité, Canada

Process sampling vs. theory of sampling (TOS)—the missing link in process analytical technologies (PAT)

K.H. Esbensen, Alborg University, Denmark

Developing meaningful international sampling standards; where do we stand today? The world's first truly horizontal (matrix—independent) sampling standard—first foray

K. Esbensen*, Albora University, Denmark and C. Paoletti[†], European Food Safety Authority (EFSA), Italy

Some theoretical and practical aspects of 1-D stream sampling

D. Francois-Bongarcon, Agoratek International, San Mateo, CA

An experimental comparison of Gy's sampling model with a more general model for particulate material sampling

B. Geelhoed, M.J.J. Koster-Ammerlaan, P. Bode, D. Dihalu, H. Cheng, Delft University of Technology, and G.J.C. Kraaijveld, Hosokawa Micron BV, The Netherlands

Response to the article 'Particle selection effects on sampling variance WCSB3-2007' (POSTER PRESENTATION)

B. Geelhoed, Delft University of Technology, The Netherlands

Evaluation of the samplings strategy for a copper ore

P. González, Servicois Industriales Peñoles, J. Ochoa, Compañia Minera La Parreña, and C. Salas, Compañia Minera La Parreña, Mexico

Auger sampling ratification

N. Kobe, Anglo Platinum, South Africa

Application of sampling theory to the sampling of grain shipments for mycotoxins G.J. Lyman and F.S. Bourgeois, Materials Sampling & Consulting, Australia

Blast hole sampling: put your money where your mouth is E. Magri and J.M. Ortiz, *University of Chile, Chile*

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The evidence of volume-variance relationship in blending and homogenization piles D.M. Marques*, J.F.C.L. Costa*, J.C. Kope*, D.T. Ribeiro†, *Federal University of Rio Grande do Sul and Vale, Brazil

Simulating sampling of aggregate materials with significant spatial heterogeneity mapping the influence of sampling uncertainty factors: analyte concentration, lot heterogeneity, sampling mode and sample size

P.O. Minkkinen* and K.H. Esbensent, *Lappeenranta University of Technology, Finland and †Alborg University, Denmark

Determination of sampling parameters by the heterogeneity and the duplicates series techniques for sampling of ore in the mining industry

R.C.A. Minnitt* and W. Assibey-Bonsu*, *University of the Witwatersrand, South Africa and †Gold Fields, Australia



Misconceptions, rumour and hearsay about sampling

D. Pollard*, Consultant in education and professional development for the minerals industry, Australia, F. Pitard[†], Sampling Consultant, USA, R. Minnitt[‡], University of the Witwatersrand, South Africa

Summary of results of ACARP project on cross-belt cutters

G. Robinson, M. Sinnott, and P. Cleary, CSIRO Minerals, Australia

Should we aim for 'zero bias' or merely for 'acceptable bias'? G. Robinson and P. Cleary, CSIRO Minerals, Australia

Variography applied as a tool to monitor metallurgy. EMPV software application to gold and silver recovery

A. Tello, Alberto Tello Y Compania Ltd, Chile



Corporate, inter-plant exclay process and product quality control—variographic analysis of bulk density kiln sampling profiles (POSTER PRESENTATION)

H. Tellesbø* and K.H. Esbensent, *Maxit Group, Norway and †Alborg University, Denmark

The effect of ore blends on minerals processing E. van Tonder, Anglo Platinum, South Africa

The evolution of the metallurgical balance estimation at El Teniente Mine A. Wilke, P. Carrasco, and M. Cortes, Codelco, Chile

Mass measurement for metal accounting—principles, practice and pitfalls C.M.G. Wortley, Consulting Engineer, South Africa





Social functions

Registration

Registration will take place on Tuesday 20 October 2009 at the Table Bay Hotel from 17:00 to 18:00. This will be followed by an informal welcoming cocktail party. Those delegates unable to register on Tuesday 20 October 2009 can register on Wednesday 21 October from 08:00 onwards.

Please note that delegates will not be allowed to attend the conference without registering and proof of payment to the SAIMM.

Tuesday, 20 October 2009

Delegates will have the opportunity to pre-register and attend a welcome cocktail event in the evening.

Wednesday, 21 October 2009

Conference presentations will begin and continue through the day. In the evening there will be an informal social event.

Thursday, 22 October 2009

Conference presentations will begin and continue through the day. In the evening there will be a formal gala social event.

Friday, 23 October 2009

Conference presentations will begin and continue through the day.

General information

Accommodation

Please note that special rates and block bookings have been negotiated at the conference venue. Kindly contact Sun International Central Reservations as per the enclosed accommodation reservation form, quoting the Group ID number. Please note room vacancy may be subject to availability. Shuttles will be available to transport delegates from nearby hotels to the conference centre.

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Cape Grace Hotel Tel: +27 21 410 7100 Email: in The Table Bay Hotel Tel. +27 21 406 5000 Website

Victoria & Alfred Hotel Tel: +27 21 419 6677 Breakwater Lodge Tel: +27 21 406-1911

City Lodge Tel: +27 21 419-9450 Southern Sun Hotels

Western Cape Tourism

Email: info@capegrace.com

Website: www.suninternational.com

Email: res@vahotel.co.za

Email: clva.resv@citylodge.co.za Website: www.southernsun.com Website: tourismcapetown.co.za

Banking / credit cards / foreign exchange

There are facilities at the Southern Sun hotels to exchange foreign currency. There are various automatic teller machines (ATMs) throughout the main premises. In all major centres in South Africa, there are banking institutions that are affiliated with international banks. Major credit cards are generally accepted throughout South Africa.

American Express Tel: +27 11 359 0200, Diners Club Tel: +27 11 358 8400,

Master Card and Visa Card Tel: +27 11 498 4699.

The following banks offer foreign exchange services: ABSA, First National, Nedbank and Standard. Banks and ATM machines are found in every city and in most towns. Several international banks have branches in the main cities. Most commercial banks are open from 09:00 to 15:30 on weekdays and 08:30 to 11:00 on Saturdays.

Car rentals

Avis Rent a Car—Central Reservations

Tel. (Intl): +27 11 923 3500, Fax (Intl): +27 11 923 3683, Toll-free: 08 000 21111

Budget Rent a Car - Central Reservations

Tel. (Intl): +27 11 392 3929, Fax (Intl): +27 11 392 3900, Toll-free: 08 600 16622

Europear Interrent—Central Reservations

Tel. (Intl): +27 11 396 9000, Fax (Intl): +27 11 396 1406, Toll-free: 08 000 11344

Imperial Car Rental—Central Reservations

Tel. (Intl): +27 11 453 0005, Fax (Intl): +27 11 453 6278, Toll-free: 08 610 13100 As a rule, hired cars may not be driven across the border to other African countries.

Climate

October is summer in South Africa, with warm days and slightly cooler evenings. Delegates should pack a light jacket or pullover.





Currency

One rand (R) = 100 cents (c); Notes: R200; R100; R50; R20; R10

Coins: R5; R2; R1; 50c; 20c; 10c; 5c

You are permitted to take R500 in SA rand notes out of the country; a levy is charged on additional amounts.

Electricity supply

The electricity supplied in South Africa is 220 to 240 V (50 Hz)—3 x round pin 15 amp plug. Hotels usually provide dual voltage 2-pin razor sockets (100-120 V and 220-240 V).

Flight information

International flight times are available from the Airports Company of South Africa under Flight Info. Tel: +27 (011) 921 6262 or Fax: +27 (011) 921 6385. Website: http://www.airports.co.za

Information desk

An information desk will be staffed daily in the exhibition area from 07:30 to 17:30.

Language

The language of the conference will be English.

Messages, telephones, facsimile, and e-mail facilities

The information desk in the conference office will take incoming messages for delegates. A facsimile/e-mail transmission facility will be available. Delegates will be requested to pay for all outgoing calls.

Other accommodation

A National Accommodation Guide, available from SATour head office and most tourism associations, has been compiled in accordance with SATour's National Grading and Classification Scheme. The guide contains details of accredited guest and country houses, bed and breakfast accommodation, star-graded hotels, serviced self-catering accommodation and private game lodges. In addition to the star grading allocation (one to five stars), exceptional services, hospitality and other intangible benefits are awarded a

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bronze or silver classification. Tariffs range from as little as R120.00 to as much as R2 000.00 per person per day.

See also: http://www.wheretostay.co.za; http://www.sa-venues.com

Speed limits

Freeways—120 km/h, urban roads—60 km/h. Drivers and all passengers must wear seatbelts. Drivers must carry their drivers' licences at all times.

Standard time

Also known as Central African Time (CAT). There is no daylight saving in South Africa. CAT = GMT + 2 hours, or CET + 1 hour, or EST +7 hours.

Visas and immigration

Visas are required by all nationals except those of Commonwealth countries, Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Rep. of Ireland, Italy, Liechtenstein, Luxembourg, Namibia, Netherlands, Norway, Pakistan, Western Samoa, San Marino, Sweden, Switzerland, Uruguay and USA. Visas ARE required for nationals of Ghana, India, Mauritius, Nigeria and Sri Lanka. Stay permits, which are extendable up to 30 days, are issued at the border.

Important note: **This is a guide only**—please check with your nearest consulate for upto-date information.

A valid passport is needed for ALL international travel. Please ensure your passport is valid for at least 6 months AFTER returning from your trip—this is an international requirement. It is also essential that you have sufficient blank pages in your passport for visas, entry stamps or temporary residence permits. We recommend allowing two blank pages per country that you are planning to visit.

Some countries will require entry, re-entry or departure permits and/or visas, which are issued at their consulates/embassies. You will find broad guidelines about your visa requirements on the Wild Times website. These guidelines are supplied by an independent company—however, it is vital for you to realize that each country's requirements may change at any given time and that Wild Times has no control over this process.

The following website has useful information for delegates visiting South Africa: http://www.sa-venues.com/tourist and visitor information.htm.





Travel insurance

If you need medical care whilst in South Africa, it is best to be aware that medical providers may not accept payment through your insurance company. In these circumstances you will have to pay in full after your treatment and file a claim with your insurance company for reimbursement. Therefore you should have access to cash, either from a credit card or by wire transfer. If you need assistance, contact your country's local embassy or representative.

To be compensated you must be treated by licensed medical personnel and provide your insurance company with proper documentation and receipts.

It is advisable to always ensure you have a comprehensive travel insurance policy which covers you for repatriation to your home country.

Tipping

According to service, but as a guideline: restaurants and taxi drivers = 10%, porters = R5.00 per piece of luggage.

VAT

The rate of VAT (value added tax) is 14%, which is included in the cost of most items. On their departure, overseas delegates can claim back the VAT paid on some purchases taken out of the country. You will be required to produce a VAT invoice for those items where VAT is to be claimed back, at the airport of departure.

Waiver of liability

The conference organisers have taken all reasonable care in making the arrangements for the conference and technical visits. The organisers do not accept liability for any loss or injury sustained, or for unforeseen changes to the programme. The organising committee reserves the right to cancel any tour or visit due to insufficient interest.

Directions from Cape Town Airport to The Table Bay Hotel

- Leave airport
- Take N2 towards Cape Town
- Right turn onto the M3 (follow signs to City/Waterfront)
- Right turn onto Eastern Blvd (follow signs to Waterfront)
- Turn right into Dock Road
- Turn right into Breakwater Blvd
- Continue past V&A Waterfront (on right)
- · Table Bay Hotel on right hand side.

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MAP TO THE TABLE BAY HOTEL

