

President's Corner



Be in the room

- Site investigations
- Geotechnical models
- Numerical modelling
- Geotechnical designs
- Operational assistance

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ROCK MECHANICS**



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Yet another year has made its way through our lives as we move towards the end of 2018 and what do you have of it? That 2 586 photos on your phone or back-up drive somewhere which will be laughing stock in a few years with regards to the funny hairstyles and fashion statements? If you sit back, can you think of those moments where you really felt ALIVE? Those are the moments we should embrace and create more of in 2019.

How many times have you sat in a meeting or even chilling with friends or family and suddenly your name is called, asking your opinion on an issue? And with that, you realise you have no idea on what the issue is. It reminds me of my school days when I was sitting in class where the whole class read from the prescribed book for the quarter. The teacher randomly calls a pupil's name whom should continue where the previous classmate stopped. Numerous times, Jannie was caught out when I started few paragraphs back repeating what was read. With this, I was not being in the room (if you are smiling now, you know exactly what I'm talking about). We are sometimes trying so hard to setup the perfect SELFIE that we miss the moment.

During the year, we are so easily distracted from what we are busy with that nothing gets done. We lose focus on where we want to be and that any road will get us there. Once we arrive at the station and refer back to the map, we realise that is not where we wanted to be.



This time of year which everybody so fondly refer to as the “silly season” is no different. We hustle to get all the loose ends tucked in before we break for the summer holidays and Christmas time. While we do that, don’t forget that the task at hand needs to be completed. There is a saying: *“The job isn’t done till the barn is swept and the tools stowed.”* In mining there is never time to get the job done the first time; however, there is always time to do it over. Why do we need to come back in 2019 to finish off what needed to be done in 2018? If you have one more pre-planning session to attend; do that, get the reports out and the barn swept. And when you do sit there, **BE IN THE ROOM.**

Now, while I am in your “room”, I would like to wish each and every SANIRE member and your family a very blessed Christmas break. May you all have a swept barn when you leave the office and find all the tools for the new year at the exact place for a productive start to 2019. My wish for you all is that that one life giving moment in 2018 will be multiplied by the amount of focus and determination you put into 2019.

Merry Christmas...

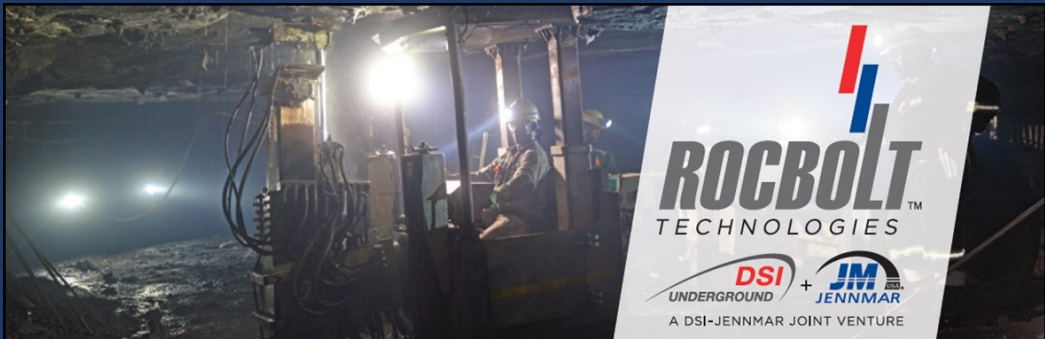
Jannie

ISRM News

ISRM Conferences

The following ISRM Conferences are scheduled:

Event title	Start date	End date	Country	City
4th Australasian Ground Control in Mining Conference - AusRock 2018	2018-11-28	2018-11-30	Australia	Sydney
2019 Rock Dynamics Summit in Okinawa	2019-05-07	2019-05-11	Japan	Okinawa
ISRM 14th International Congress on Rock Mechanics	2019-09-13	2019-09-18	Brazil	Foz do Iguaçu
YSRM2019 - the 5th ISRM Young Scholars' Symposium on Rock Mechanics and REIF2019 - International Symposium on Rock Engineering for Innovative Future	2019-12-01	2019-12-04	Japan	Okinawa
EUROCK 2020 - Hard Rock Excavation and Support - the ISRM European Rock Mechanics Symposium	2020-06-00	2020-06-00	Norway	Trondheim



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Huge honour for Mining Engineering Doctorate

The International Society for Rock Mechanics and Rock Engineering (ISRM) Board, which were founded in 1962 in Salzburg, Austria, decided at its Tokyo meeting in September 1981, to institute an annual prize with a view to honour the memory of Past-President Prof. Manuel Rocha. Profiting from the basis established by Prof. Müller, Prof. Rocha organized the first ISRM Congress and he was the leader that was responsible for transforming the international collaboration carried out in an amateurish way into a real international scientific association, having for the purpose settled the fundamental lines that have guided and supported the ISRM activity along the years.

The Rocha Medal is intended to stimulate young researchers in the field of rock mechanics. The prize, a bronze medal and a cash prize, have been annually awarded since 1982 for an outstanding doctoral thesis selected by a Committee appointed for the purpose.

The ISRM 2018 Rocha Medal was awarded to Dr. Michael du Plessis at their annual gathering held at the ARMS 10th Asian Rock Mechanics Symposium in Singapore during October. Dr. Michael du Plessis completed his doctoral thesis in the Department of Mining Engineering in 2016. His name is now mentioned among the group of elite researchers in the field of Rock Engineering in the world and adds to the weight and research capacity within the Mining Engineering Department at University of Pretoria.

Dr. Michael du Plessis is appointed as the Group Rock Engineering Manager for Lonmin. As the third largest platinum producer, his role requires him to optimise the business in terms of safety, profitability and long term sustainability.

Michael pro-actively initiates and participates in many projects to develop new mining methods, systems and technologies. His PhD study was aimed at developing a better understanding of crush pillar behaviour. This pillar system provides an optimised extraction strategy as mining progresses deeper and benefits this industry in terms of safety and production. This work therefore has the potential to significantly impact on the profitability and sustainability of the platinum industry in South Africa.

Michael conducts further pillar related research through the University of Pretoria alongside Prof. Francois Malan (previous recipient of the Rocha medal) and Prof. John Napier (Supervisor, co-supervisor and involvement to 4 recipients of the Rocha medal). The ongoing research is intended to address shortcomings in understanding the design, application and behaviour of pillar systems in the platinum mines. This has in the past led to the closure of mines due to uneconomical mining or under-design, resulting in mine instability.

One of Michael's other research interests is to study and understand the geologic structures contributing to large scale structurally related instability of mining excavations in the platinum mines. He leads this area of study with numerous publications guiding industry on the learnings from case studies he has personally taken part in or supervised.

Michael is one of the key figures in South African Rock Engineering. He provides guidance to industry regarding ongoing research requirements. He also assists with the development of the Rock Engineering qualification to ensure operational competence. Michael has successfully implemented a Rock Engineering development pool over the past 10 years exiting qualified Rock Engineers to industry. He is passionate about the advancement of willing individuals and personally supervises their progress.

Abstract to his doctoral thesis: "The design and behaviour of crush pillars on the Merensky Reef"

Crush pillars are used extensively in the platinum mines of South Africa as part of the stope support in intermediate depth tabular mines. Effective crush pillar design ensures that the pillars crush when formed at the mining face. This behaviour occurs when the pillars have a width to height ratio of approximately 2:1. Once crushed, the residual stress state of the pillars provide a local support function. In many cases, effective pillar crushing is not achieved, resulting in pillar seismicity. As this mining area produces approximately 70% of the world's platinum group metals, it is critical that layouts and pillar design are optimised to ensure safety and sustainable production. The objective of the research was to determine the parameters which influence crush pillar behaviour. A limit equilibrium constitutive model was proposed to investigate the behaviour of the pillars. The model, implemented in a displacement discontinuity boundary element code provided insights into the stress evolution of a crush pillar. The results indicated that the stress on the pillar depends on its position relative to the mining face, size, the impact of geological structures, layout, rock mass parameters and mining depth.

A comprehensive underground mining trial was conducted to quantify the behaviour of crush pillars. A numerical model was used to back analyse the pillar behaviour at the underground trial site which consisted of a mined area of approximately 22 000 m² containing 55 crush pillars. Both the observed and measured behaviour of the crush pillars in the trial site could be replicated by the model. The findings validated the use of the limit equilibrium model to simulate the behaviour of crush pillars on a mine-wide scale.



STRATA CONTROL PRACTICAL EXAMINATIONS REQUIREMENTS

2019 ONWARDS

In order to ensure that we have an appropriate process in place which addresses the needs of all our members, SANIRE has launched the new online electronic practical examination registration portal via our website. This will cater for the registration of the Strata Control Officer (SCO) practical exams. The intent of the system is to ensure that SANIRE can administer the registration process to make sure that any potential irregularities are ruled out in the future. All the practical exams will be coordinated at central venues to cater for the needs of all candidates within their branch areas.

Hosting of a SCO Practical Exam

- The SCO practical exams will be coordinated and hosted per SANIRE Branch thus catering for their members
- Rock Engineers and Mines are not permitted to host exams without the involvement of the SANIRE Branch and relative exams committee
- Approved costs of the practical examination may be claimed for by the SANIRE Branch Chairman from SANIRE Council
- Exams will be held twice annually in March and August

Registration Cost

- The registration process and fees payable will be managed by SANIRE's Education Fund
- R500 for SANIRE member/associate member and R1200 for non-SANIRE member
- The R1200.00 non-member rate will receive a one-year SANIRE Associate Membership for free. Should the candidate fail the examination, the following examination would be R500 as part of the free membership. Should the candidate fail a second time, then he/she will need to pay the R1200 and the cycle continues.

Registration Process

- Complete the online registration <https://www.sanire.co.za/education/practical-examinations/strata-control-officer-practical-registration>
- Candidates are to ensure that they attach all relevant documentation (CV, certificates/qualifications, proof of passing the Strata Control Theory Examination and proof of payment)
- All documents must be in the required format (Files allowed: .doc, .docx, .pdf, .ppt, .pptx, .xls, .xlsx, .jpg up to 30MB)
- Banking details are on the registration page
- Candidates are to ensure that all details are entered correctly and that the correct region / branch is selected
- There are compulsory fields to complete when registering. If any of the fields are not completed (or proof attached), the registration will be unsuccessful.

- Candidates will be notified of registration within seventy-two (72) working hours
- If candidates do not receive a registration acceptance, then the registration has not been successful
- Applications must be completed with all relevant documentation and within the given timeframe to be completed successfully
- The SANIRE Council Secretary will keep an updated list of registrations for each Branch of which will be made electronically available for each Branch Chairman
- The SANIRE Council Secretary will distribute the candidate list to the Regional Branch Chairman by the next working day following registration closing
- Candidates will receive further communication by the Branch regarding the SCO Practical Examination arrangements. Should candidates not receive any communication, they are advised to contact the Branch Chairman immediately

Candidates Responsibilities

1. Successfully register for the examination on time
2. Keep in contact with the branch regarding the examination
3. Be well prepared for the examination
4. Do not be late for the examination. Candidates who are late without a valid reason or who miss the underground trip will not be allowed to attempt the examination; will forfeit their examination and only be able to attempt the following practical examination
5. Candidates will be required to bring along a laptop (with charger), camera, distomat / tape, clinoruler / compass, all required PPE, scale ruler; general stationary and any other daily underground equipment which might be required for the exam
6. Make suitable observations and records of observations for use during the examination
7. Keep up with the group underground and not lag behind or get lost
8. Working safely during the examination
9. Any concerns with regards to the examination must be brought forward to the Branch Chairman within 2 working days of the examination
10. To attempt a maximum of two (2) times per year and only one attempt per six (6) months (preferably pass 1st time!)

Branch Responsibilities

1. The Branch Chairman will call for the examination prior to the date of the exam
2. The Branch Chairman is responsible to add the event to the website
3. Members of the branch must assist the Chairman with a suitable venue for the examination
4. Prior to the examination, the Branch Chairman must appoint an Exams Committee who will be responsible to set the examination. The Exams Committee must comprise people with suitable experience for the mining method and be holders of the COM Rock Mechanics Certificate or COM Advanced Rock Mechanics Certificate.
5. The Exams Committee may utilise the Youth Development Representative of the Branch to assist with SCO Practical arrangements
6. The exams committee sets the exam
7. The exam is to be moderated by all members of the exams committee to check relevance and level
8. The Strata Control examination must consist of an underground trip and plan reading, but will also test candidates report writing skills, computer literacy and the ability of a candidate to interpret and use basic data
9. The majority of the examination must take place on a formal template which will be marked by the Examiner appointed by the Branch Chairman and Branch Exams Committee. The remaining portion of the exam will comprise an oral question and answer section of which will be marked by a group of examiners (minimum of two (2) examiners)
10. Candidates must not be examined by examiners of the same company or where a conflict of interest may exist.
11. The written portion of the examination is to be marked by an appointed examiner of the exams committee and then moderated by an external examiner that is external to the setting of the examination
12. Any concerns raised by examiners or candidates are to be reviewed by the Chairman to ensure fairness

Additional Examination Requirements

In addition to the above requirements candidates who want to take part in the Strata Control examination going forward into 2019 will require and have to show proof of prior mining exposure. This process will be implemented from February 2019 and will be expanded on over the next couple of exams to ensure candidates are provided with the required time to get the additional requirements in place. The intent is to develop well rounded Strata Control Officers and Rock Engineers to service our mining teams.

From February 2019: Competent A + B Certificate and Level 2 mining operations qualification. (The Level 2 qualification comprises of nineteen (19) modules and can be done on a full or part time basis which will take approximately two to four (2-4) months to complete.)

From February 2020: Temporary or full blasting certificate (The blasting certificate builds on from the level 2 qualification and requires an additional two (2) week theory blasting preparation course as well as seventy-five (75) underground face shifts for to obtain the practical component.

Kind Regards on behalf of SANIRE Council

SANIRE Birthdays

December to February

J Motsoto	January
M Ramathaga	December
LD Tlhoale	February
NS Mhlana	February
MN Moleke	December

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Year End Functions

Eastern Bushveld Branch

The SANIRE Eastern Bushveld Branch broke away from the normal and hosted their last meeting for the year at Induna Adventures – no presentations, just fun. Delegates opted for quad biking and even though it was a first-time experience for some, was thoroughly enjoyed. The route took us through macadamia orchards which was a nice break from rock faces....

Thank you to all the suppliers that sponsored, making the event possible.



Year End Function

Western Bushveld Branch



	JOIN US AT SANIRE'S WBB YEAR END FUNCTION	
SAVE THE DATE : 16 NOVEMBER 2018 (VENUE:TBC) THEME : GREEK GAMES DRESS CODE : GREEK / ROMAN ACTIVITIES : DISCUSS, JAVLIN, SHOTPUTT, FARMERS WALK, SACK RACE, TUG OF WAR, BOWLS AND CABER TOSS TO MENTION A FEW. GROUP ENTRIES : 4 PER TEAM GENDER MIX ENCOURAGED : LADIES WILL BE PROVIDED WITH LIGHTER WEIGHTS – COMBINED TIME / DISTANCE QUALIFICATION – PRIZES "THIS IS SPARTA"		

Sp Adobe Spark



Year End Function

Gauteng Branch

The SANIRE Gauteng Branch members and their families engaged in a slightly strenuous start to a Saturday morning at the picturesque Walter Sisulu National Botanical Garden as we commenced with the walk. The breathtakingly beautiful waterfall, great weather and the promise of cold crisp beers soon dissipated all threats of tossing the branch committee members from the top of the ridge!



The smiling explorers...before we summited the waterfall



Enjoying the scenery while trying not to assess the stability of the slopes

Interesting facts about the history of the gardens, the geological sequences of gold-bearing quartzites and magnetic mudstones as well as spectacular flora, bird and bug life were picked up along the trail. We were also lucky enough to spot a Giant Kingfisher!



Taking a break to admire the view, fun facts and the top-of-the-range sports model of all locusts

Everyone was rewarded with a wide variety of cold drinks and a scrumptious 3-course lunch at the Eagles Fare Restaurant.



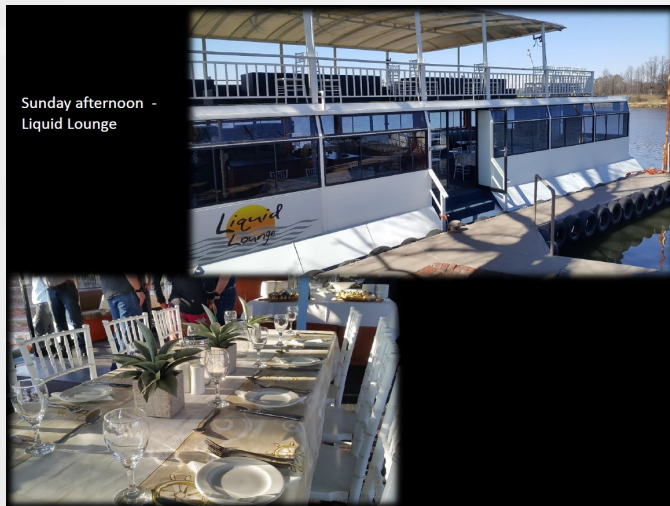
Recharging at the Eagles Fare Restaurant

One of the attractions that the Walter Sisulu National Botanical Garden is famous for are the Black eagles (*Aquila verreauxii*) which nest on the cliffs adjacent to the Witpoortjie Falls. This nesting site is believed to exist prior to 1982 when the garden was officially established. The website boasts that initial sightings of these raptors date back to the early 1940's and the present-day female eagle could well be the third or fourth generation since that era. The SANIRE Gauteng Branch managed to raise a total of R840 from generous contributions made by its members for the Black Eagle Project Roodekrans (BEPR). More information on the BEPR initiative can be found on the website www.blackeagles.co.za.



Handing over of the generous contribution from the SANIRE Gauteng Branch

The year-end function was summed up to be an eventful and relaxing end to a busy and tiring year. SANIRE Gauteng Branch would like to extend a great thanks to our sponsors, Timrite, New Concept Mining and Mid-dindi Consulting, without whom the event would not be possible, the committee members for the hard work in event organisation and dedication throughout the year and especially to the members who take time out of their busy schedules to attend such events.

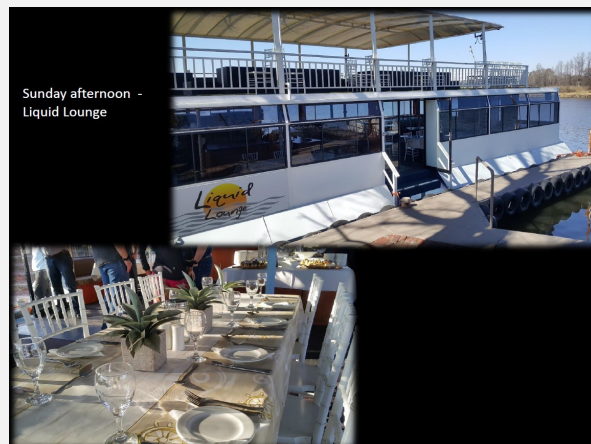


 **SANIRE FREE STATE**
SARES 2018
 16 & 17 September 2018

“The Art of Balancing Safety and Production”



Emerald Casino, Vanderbijlpark





Advertising

The **SANIRE** Committee has decided to increase the advertising opportunities for suppliers who would like to market their business and products in the Rock Talk.

The table below indicates the prices for different size advertisements as well as bookings for the future.

Please contact **Alida Hartzenberg** for more details

Alida.hartzenberg@lonmin.com

Type of advert	Rates (Excl. VAT)	Availability per	Mar-19	Jun-19	Sep-19	Dec-19
	Solus, Casual	newsletter				
Square (Not front page)	R 1 000	4		1 Booked		
Skyscraper (Front page)	R 4 000	1	1 Booked		1 Booked	
Full page (Middle)	R 8 000	2				



SANIRE

SOUTH AFRICAN NATIONAL INSTITUTE OF ROCK ENGINEERING

Vision:

To actively promote the South African Rock Engineering profession

Mission:

SANIRE promotes the advancement of the Rock Engineering discipline by encouraging and promoting:

Interest and the development of education in Rock Engineering

Professional practice and high ethical standards

Networking, collaboration and information exchange

Research areas

Values:

- Honesty
- Integrity
- Professionalism
- Accountability
- Transparency

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www.sanire.co.za

Editor's Corner

This is your newsletter and I would like to hear from you.

If you have any information or stories that we can use, please submit them via email to

alida.hartzenberg@lonmin.com

Your feedback will be highly appreciated.