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## The CGS Honours Excellence: Beyond Layers Awards

### INTRODUCTION

On Thursday, 5 December 2024, the Council for Geoscience (CGS) successfully hosted the Gala Dinner and Excellence Awards under the theme “Beyond Layers” at the Kievits Kroon Gauteng Wine Estate in Tshwane. The theme aimed at immersing the staff and guests on a voyage to South Africa’s diverse geological history, exploring the depths of the earth as a metaphor for delving into the awardees’ achievements.

The prestigious event sought to highlight and exemplify the year’s greatest achievements and to celebrate the outstanding performance of the CGS staff, by recognising and acknowledging the invaluable efforts of all team members throughout the year.

The CGS oppos were the epitome of dapper in their stunning black-tie appropriate dresses and suits, revering the evening’s theme. Our Master of Ceremonies (MC), Mr. Clement Manyathela, a well-known South African television and Radio Broadcaster, led the event with a remarkable fluidity, keeping everyone captivated.

### ATTENDEES

In attendance was the CGS board chairperson, Mr. Kelepile Dintwe, who warmly welcomed the guests and gave an introductory address, noting that ‘it has indeed been a long year filled with challenges, but the CGS family has stood firm to ensure that the mandate is fulfilled with excellence.’

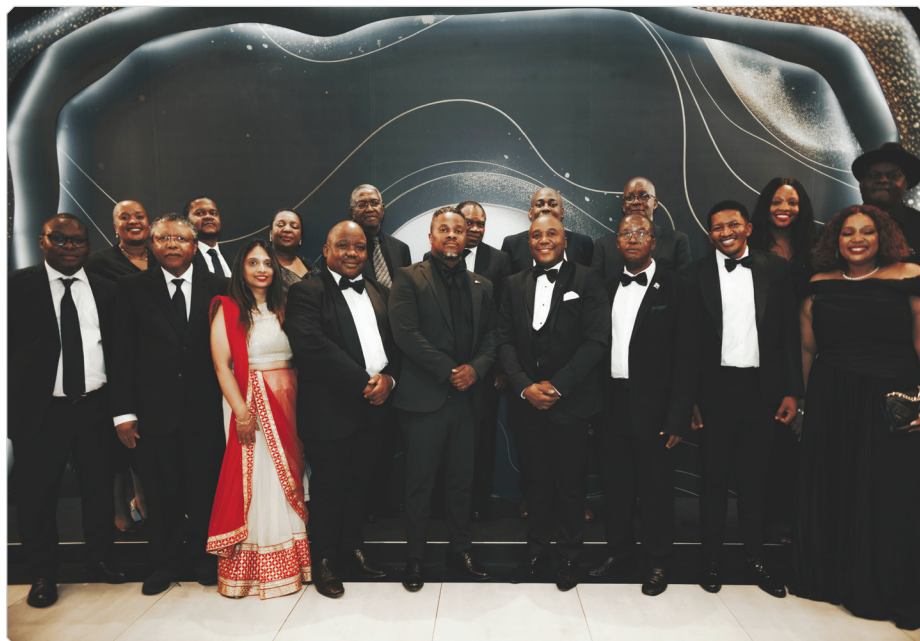


Figure 1: Council for Geoscience Chief Executive Officer, Mr. Mosa Mabuza and delegates.



In Mr. Mosa Mabuza's opening remarks, the CGS CEO graciously thanked the staff members for all their hard work and dedication throughout. In his colloquial words, he expressed, "I usually do not praise the fish for swimming, because after all, it's their duty to swim", but CGS family has been exceptional throughout the year, and it is fitting to celebrate this milestone. Whilst urging the CGS to continue striving for excellence and to provide geoscientific solutions for development, his closing remarks were well received.

Along with the CEO, the esteemed dignitaries took to the stage to honour and recognise deserving officials with service awards and

certificates of excellence for their outstanding performance. The officials posed for pictures and enjoyed a congratulatory applause.

This event was graced by the presence of distinguished individuals from various sectors, including other state bodies; academic institutions, and various members of traditional leadership organisations, including the Head of the Imperial House of Ethiopia, Mr. Estifanos Matewos.

From the office of the CEO, Dr. Thuli Khumalo, Acting Executive Manager for Corporate Services, provided a heartfelt thank you speech, expressing her appreciation and gratitude to the

honoured CGS colleagues as well as the esteemed guests for honouring the invitation, following which she closed the formal proceedings accordingly.

The dignitaries were still enthralled in the evening's festivities; prominent local award-winning DJ Lamiez Holworthys' electrified entrance elevated the attendees to the dancefloor. With a sudden power outage, the honourees and guests continued the festivities with the celebratory mood outside, echoing the night's theme of relentless perseverance and a relentless spirit; despite the challenges, the CGS charges forward toward success.









# South African Diamond Show 2025, Cape Town, South Africa

## INTRODUCTION

The inaugural **South African Diamond Show**, held from the 2<sup>nd</sup> to the 5<sup>th</sup> of February 2025, marked a significant milestone for South Africa's rich diamond heritage. The State Diamond Trader of the Republic of South Africa in collaboration with the Minister of Petroleum Resources commissioned the show, which took place at the renowned Capetonian hotel in the Cape Town City Centre.

The theme of the event was **Evolution and Promotion of Natural Diamonds**, and it created a pivotal platform for industry leaders, professionals and diamond enthusiasts to network and display their skills, services and expertise.

The Council for Geoscience, South Africa's premier geoscience institution, was honoured to have an opportunity to exhibit and highlight our key role in supporting the diamond industry's foundation through comprehensive geological research and data provision.

## ATTENDEES

Mrs. Wahiebah Daniels and Mrs. Marcelene Voigt were chosen to represent the Council for Geoscience at the event. The various exhibitors for the event ranged from diamond traders, jewellers, polish and cutting experts to the diamond miners. South Africa has a well-established Diamond industry both onshore and offshore. The country's operations range from the kimberlite pipes of open-pit mining in Kimberly to the Alluvial diamond deposits that run off from the Orange River.

The event hosted various attendees, from students to industry leaders, technological experts and even security and logistics specialists, whose main task was the security and transportation of the diamonds. The value of the diamonds on display was not disclosed,



**Figure 1:** Wahiebah Daniels and Marcelene Voigt representing the Council for Geoscience at the inaugural "Diamond Show" at the Capetonian Hotel in Cape Town City Centre. (Picture Source: State Diamond Trader).

but the security presence at the event was an indication of the value of the sparkling stones. The event afforded the CGS a strategic opportunity to engage with students, industry leaders and individuals interested in opening their mining operations.

## SUMMARY

The highlight of the event was the "Diamond Hunt", a treasure-hunt-style competition, where attendees had the opportunity to answer a series of questions based on Diamond trivia and win a real diamond. Three lucky attendees won three diamonds up to the value of R20 000.

In summary, the first South African Diamond Show was a resounding success in bringing the public, industry leaders and up-and-coming innovators together to network and strengthen the South African Diamond industry.

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## Dr. Arthur Lewis Hall – His first 4000 rock samples

The archive of the Council for Geoscience contains some documents and photos that provide some insight into the life and times of geologists from days gone by.

An item labelled “**Catalogue Rock Specimens**” belonged to Dr. A.L. (Arthur Lewis) Hall. Dr. Hall was born in England in 1872 and early 1903, he took up a Colonial Office appointment in South Africa, Pretoria (Tshwane), as a geologist to the Geological Survey of the then Transvaal, which had been re-constituted under Dr. H. Kynaston after the termination of the Anglo-Boer War (also known as the South African War) of 1899-1902. Dr. Hall retired in 1932 after serving as the Assistant Director of the Geological Survey of the Union of South Africa. During his career, Dr. Hall contributed to a significant number of geological maps and publications.

Beginning his study in 1903 of then Transvaal geology in the immediate environs of Pretoria, Dr. Hall worked for some years in an ever-widening area to the east, north and west of the capital, mapping and reporting on the outcrops examined by him during each field season. Dr. Hall also paid attention to the study of the mineralisation exhibited by the rocks that he encountered. Many months were spent in the field, mostly during the cooler months of the year. Mrs. Pollock, a daughter of Dr. Hall who often accompanied him during fieldwork, described how after he first finished updating his maps every night, “came the final specimen preparation of the rocks brought back to the camp each day. Each was chipped to an astonishingly regular rectangle carefully labelled and noted in his dairy.”

The catalogue contains no less than 4000 sample numbers. Oddly, the column for recording the date briefly disappeared from May to July 1905 and finally disappeared again after June 1908. Therefore, a precise date for most of the samples are not available, and often, just a mention of the months a batch of samples was taken is given in the

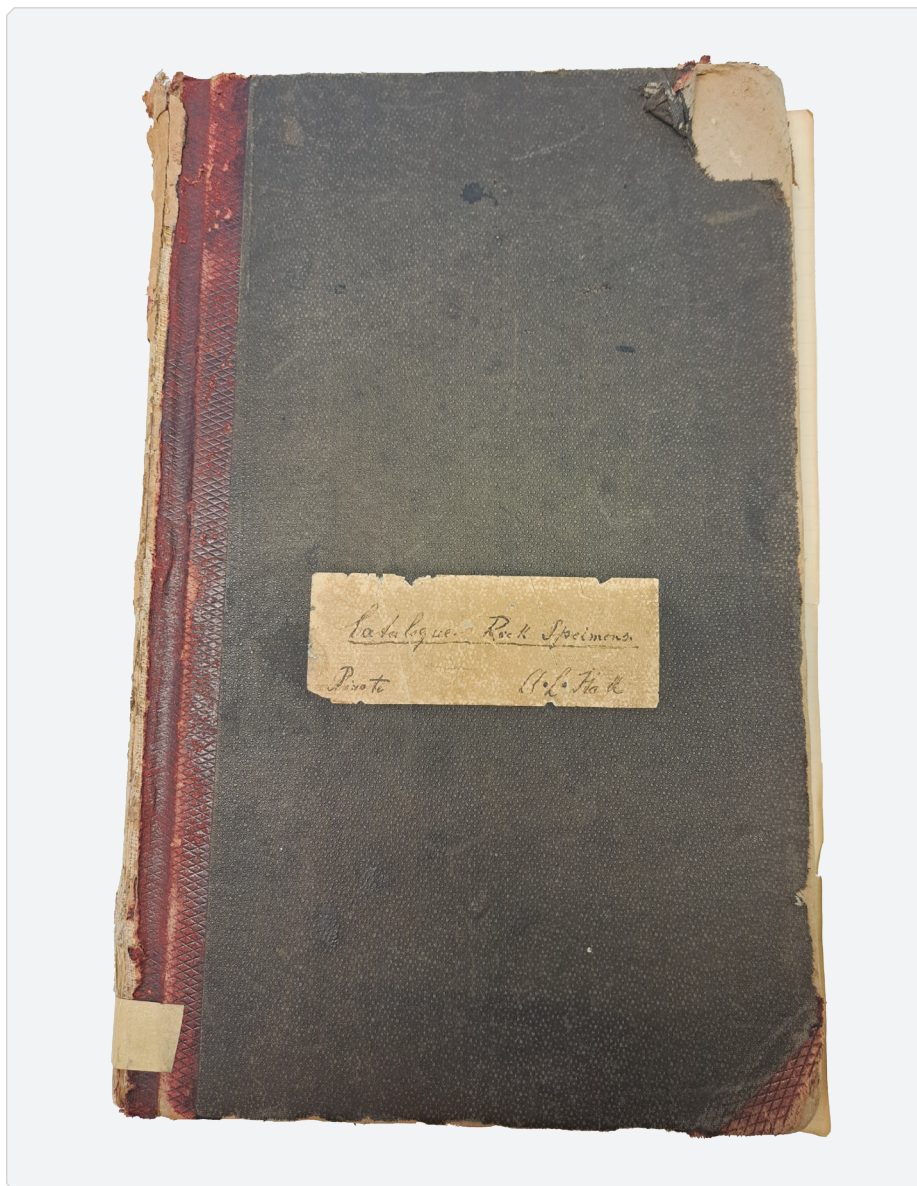


Figure 1: Sample catalogue of Dr. A.L. Hall in the archives of the Council for Geoscience.

1				
No	Rock	Locality	Date	Remarks
1	Lava	L. Helena from George Clipp at the landing place	Feb. 2. 03.	
2	Lava	do	do	
3	Dryha conglomerate	Dr. Prins Albert Cape Colony	Feb. 20. 03.	
4	do	do	do	
5	Main Reef Leader	George Loch Miao 4 <sup>th</sup> Level	March 6. 03.	2 specimens
6	Dryhe ?	do do	do	

Figure 2: Partial image of the inscriptions of the first samples in Dr. Hall's sample catalogue.



“Remarks” column or at the top corner of the page. Sample number 1000 was collected in 1909, 2000 in 1914, 3000 in 1921 and 4000 in 1927.

Samples nr. 1 and 2 in the catalogue date from 2 February 1903. On his way from England to Cape Town, Dr. Hall's ship briefly stopped at the island of St Helena, a small remote island approximately 1800 km west of Namibia and Angola. Dr. Hall remarked that the two samples of lava were samples taken from the foot of the cliffs at the landing bay.

Dr. Hall disembarked in Cape Town harbour and travelled by train to Pretoria. Samples nr. 3 and 4, labelled as Dwyka conglomerate, were sampled on 20 February 1903 “In Prince Albert Cape Colony”. However, no Dwyka rocks outcrop at the Prince Albert Road station and the Dwyka outcrop at the village of Prince Albert is approximately 50 km away from the station. Although barely located just outside the old Division of Prince Albert, a more likely location where Dwyka rocks are easily accessible would be Matjiesfontein station and hotel (nowadays the District of Laingsburg), which was a well-known refreshment stop for trains.

Dr. Kynaston, the newly appointed director of the old Geological Survey of the Transvaal, stated in the Administration Report of the Mines Department of 1902/1903 that Dr. Hall assumed his duties on 23 February 1903. Dr. Kynaston mentioned short excursions made during 1903 to familiarise the geologists with the local geology while the wagons and field equipment were being prepared. The excursions continued intermittently from 4 March to 28 May 1903, and on 6 March 1903, sample nr. 5 of the Main Reef Leader from the George Goch gold mine was the first official sample taken by Dr Hall while employed as a geologist by the old Geological Survey of the Transvaal. Sample numbers for the rest of the excursions continued to sample nr. 41.

On 8 June 1903, Dr. Hall, together with Dr. Mellor, started his first 2-week-long mapping excursion just to the north of the Magaliesberg Mountains near Pretoria, now known as Tshwane. Dr. Hall took



Figure 3: A cropped image from the archives of the Council for Geoscience showing Dr. A.L. Hall in field attire in front of a field wagon. Note the kitchen set-up in the back of the wagon.

the first samples of magnetite (sample nr. 42) on 11 June 1903 near the Pyramid station, formerly the Waterval station, approximately 12 km to the north of the Magaliesberg Mountains. It took 2 days of travelling to get to this location, a realistic time scale for travelling with a donkey wagon during the early 1900s.

From here on, Dr. Hall's progress can be followed in the sample catalogue and makes for an interesting reflection of his activities and his publications. The quantity of samples differs from year to year. During the Shaler Memorial Expedition of 1922, Dr. Hall collected approximately 570 samples during the numerous field trips and special trips. In February 1926, Dr. Hall collected only 36 samples of mainly manganese ore in the Postmasburg area. The next batch of samples was only taken a year later in February 1927. Dr. Hall, attending the 1926 IGC in Spain during May- June 1926, explains this time gap. Dr. Hall

would likely also have taken some extended leave after the IGC to visit family in England.

The last 6 samples in the catalogue are not dated but appear just after a batch of samples labelled as “Various Manganese Iron Ores June-Aug 1927”. Unfortunately, a continuation of the list from 1927 up to A.L. Hall's retirement in 1932 does not seem to be available, as this would have included his field trips during the 1929 IGC that was held in Pretoria with numerous field trips all over South Africa as well as some neighboring countries.

This sample catalogue shows the great efforts and enthusiasm Dr. Hall possessed, which should serve as an inspiration to others.

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# The 51<sup>st</sup> International Association of Hydrogeologists Congress in Davos, Switzerland

## BACKGROUND

The International Association of Hydrogeologists (IAH) is a scientific and educational charitable organisation for scientists, engineers, water managers, and other professionals working in the fields of groundwater resource planning, management, and protection. The association was founded in 1956 during the International Geological Congress (IGC), with an aim and mission to raise awareness of groundwater issues and work with national and international agencies to promote the use of groundwater to ensure ready access to safe drinking water.

IAH also promotes the protection of aquifers against pollution, the improvement of aquifer storage and the management of groundwater resources to assure the sustainability of groundwater-dependent ecosystems. From small beginnings, IAH has grown into a truly global organisation with over 4000 members in more than 130 countries with congresses taking place worldwide. Following the 50<sup>th</sup> IAH congress, which was held in Cape Town, South Africa, the congress moved to the Alpine setting of the Swiss Alps, in Davos, Switzerland.

## CONFERENCE PROCEEDINGS

The 51<sup>st</sup> International Association of Hydrogeologists (IAH) annual congress was held in Davos, Switzerland, from 8<sup>th</sup> - 13<sup>th</sup> September 2024 under the overall theme "Interacting Groundwater". The Congress was organised by the Swiss Society of Hydrogeology (SSH) and the Centre for Hydrogeology and Geothermics of the University of Neuchâtel (CHYN) and took place at the famous Davos Congress Centre in Switzerland.

The Congress was attended by 1150 delegates from 85 countries, which were delegates from academia, government and industry. The plenary and invited speaker presentations,



Figure 1: Makubalo Sisanda representing CGS at the 51<sup>st</sup> IAH Congress.

posters, and sessions from early career young professionals, latest research findings and innovative solutions on hydrogeological sciences were shared. This also included evening events and mid-week excursions, providing additional networking opportunities in the scenic alpine setting.

The CGS was represented at the IAH congress by Miss Sisanda Makubalo, who gave a talk titled "**Siting of boreholes in Maluti-a-Phofung Local Municipality: The value of a Multidisciplinary Approach**" under sub-theme: Sustainable groundwater resource management. The presentation

highlighted the importance of using different datasets such as aerial and ground-based geophysical surveys supported by the high-resolution structural and geological mapping in identifying and developing high potential groundwater sites for water supply to the town of Phuthaditjhaba.

Miss Makubalo also went to an intra-conference field excursion about the hydrogeology of the film's rock avalanche in Switzerland. Rock avalanches modify landscapes dramatically and almost instantaneously and tend to create dams that block rivers and lead to the formation of lakes.



A 500 m thick Late Jurassic to Early Cretaceous limestone sequence that tends to form high cliffs played a dominant role in the development of the rock avalanches. The limestone, which was located below a thrust fault, was exposed and karstified after the Würm glaciation. About 9450 years ago, a large rockfall dammed the springs and raised the groundwater by several hundreds of meters. Springs then fed the groundwater body, which developed within the rockfall mass, creating lakes (Lake Pulte and Lake Caumassee) in depressions. Approximately 20 years ago, a tunnel was built through the limestone below the rockfall, crossing karst conduits with a significant discharge rate ( $\sim 1 \text{ m}^3/\text{s}$ ). It was used for hydropower production, but it drained the karst aquifer, thus drying out several springs and one lake. Following extensive data acquisition and modelling work, a plan was developed to artificially feed the lake against tunnel drainage and drought related to climate change.



Figure 2: Makubalo Sisanda presenting at the 51st IAH Congress.



## CONCLUSION

Groundwater will change in the future under climate change; however, in many regions it is uncertain in which direction this change will be. Whether groundwater will increase or decrease, and the implications of this for streamflow is crucial that as a community of hydrogeologists we address this

challenge to provide this information to decision makers to develop robust adaptation strategies. Multiple springs have run dry in South Africa; perhaps similar research, i.e. groundwater modelling in Switzerland would help to get the reason why this is happening.

Figure 3: A. Lake Caumassee, which has a beautiful turquoise color due to the small presence of calcite crystals. B. Pulte Spring, which somehow looks like a crater when dry. C. View of the famous "Glarus thrust fault". D. Lithologies around the Films' rock avalanche.

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# The interpretation of the high-resolution InSAR subsidence results for Sanral

## INTRODUCTION

The South African National Roads Agency Limited (SANRAL) contracted the Council for Geoscience (CGS) to assess subsidence and sinkhole formation along selected national road reserves. A major component of this project was the use of satellite interferometric synthetic aperture radar (InSAR) imagery for detecting subsidence within a 250m buffer around these roads. The project included roads underlain by dolomite across three provinces, Gauteng, North West, and the Northern Cape, spanning 664km of road. The requirement was to use 3-meter high-resolution satellite SAR imagery for InSAR processing. To date, this is the largest known high-resolution InSAR study done in South Africa, covering 8310.23 km<sup>2</sup> processed with InSAR.

The aim of the InSAR study was achieved, which is to increase our understanding of the small-baseline subset (SBAS) subsidence results and to contribute to the Hazard Risk Zonation information system of the Dolomite Risk Management Strategy (DRMS) Framework report (CGS report 2024-0016). The software used for SBAS processing is SARscape in ENVI. SBAS is an InSAR layer stacking technique that utilizes multiple SAR scenes per area (at least 15 scenes) to remove atmospheric effects and produce more accurate results.

The high-resolution RADARSAT-2 (RD2) imagery was acquired from MDA Space Canada at a 3-meter spatial resolution. RD2 is a C-band synthetic aperture radar (SAR) satellite with a revisit time of 24 days. Imagery was acquired from August 2022-2023, which included 15 repeat scenes or images per area. The information extracted from the InSAR data is vertical deformation (VD) information, i.e., uplift and subsidence that occurred within this period for each road section within the vertical direction. Auxiliary datasets to analyse the reliability of the VD results were also

**Table 1. The statistics for the SBAS-derived layers for Centurion**

LAYER	MINIMUM	MAXIMUM	MEAN	STANDARD DEVIATION	SKEWNESS	KURTOSIS
Mean Subsidence	-7.60	0.00	-3.28	1.87	0.02	-0.82
Mean Deformation	-7.60	8.59	0.35	3.14	-0.51	-0.60
RMSE	0.23	2.09	0.77	0.25	1.48	3.35
Coherence	0.22	0.99	0.91	0.06	-2.31	9.88

extracted, namely the root mean square error (RMSE), which is a measure of uncertainty, and the coherence, which is a measure of change between the 15 scenes of each area.

The study area was divided into twenty areas of interest (AOI), which were processed and analysed individually. A cluster analysis was done on each AOI, which highlighted the areas of most subsidence, within each AOI. The k-means cluster analysis simplified the interpretation by grouping the subsidence values. The cluster analysis also made it possible to create subsidence hotspot distribution maps and to extract the percentage distribution of subsidence hotspots in each area.

The cluster density maps show a comparable spatial distribution of the subsidence hotspots across all areas. Interestingly, it was found that the absolute value of the subsidence does not necessarily indicate the severity of the subsidence of the region and sinkhole formation potential.

For example, in the Gauteng Province, the Centurion area is well-known for hazardous sinkhole formations, having the smallest range of deformation values and the largest percentage of subsidence hotspots.

## CENTURION RESULTS

Centurion has the smallest range of values of all areas, ranging from -7.6 mm/

year to 8.59 mm/year (Table 1). The percentage of subsidence pixels of the deformation pixels is 35.47 %. The standard deviation for all layers is low, and the data is normally distributed with slight to no skewness. This indicates that there are no outliers in this dataset.

The Centurion area has many sinkholes, as well as severe sinkholes along the N1 and R21, even though the InSAR data shows small values of subsidence. It can, therefore, be derived that the absolute value of the subsidence does not necessarily indicate the intensity of subsidence and sinkhole formation in an area. It is for this reason that each area is analysed separately within the context of that area.

The maximum RMSE is low at 0.09, and the average coherence is close to 1 at 0.91 (Table 6). The maximum RMSE occurs close to the N1-R21 interchange,

**Table 7. The statistics from the k-means cluster analysis for Centurion**

Class	Mean (mm/year)	Standard Deviation	Percentage (%)
Class 1	-6.5714	0.4230	8.67
Class 2	-5.2509	0.2975	12.30
Class 3	-3.9170	0.4920	37.80
Class 4	-2.2898	0.4381	20.10
Class 5	-0.5938	0.3889	21.13



a.k.a. the Flying Saucer Interchange in Centurion. High coherence values (good) were present mainly on the buildings in the area. The mean subsidence occurs in spatial groups of different degrees. At the N1-R21 interchange, the subsidence is small at -2.89 mm/year, and higher degrees of subsidence ( $< -4.17$  mm/year) occur in the same location as the high RMSE sections.

The k-means cluster analysis produced five classes (Table 7), and the two classes with the lowest subsidence mean values (classes 1 and 2) were selected and combined for the class density distribution map or subsidence hotspot map (Figure 1). 94.8 % of the points fall within the highest value class (class 5), and nearly 50 % of the points are in class 3. The cluster density distribution map of classes 1 and 2 indicates subsidence hotspots and shows that the most severe subsidence for Centurion occurred along the N1 just south of the N1-R21 interchange and directly north of the interchange on the R21. Three distinct subsidence hotspots formed, which correlate to the high RMSE values.

### SUMMARY OF ALL AREAS

The percentage distribution of the subsidence hotspots per area is shown in Figure 2, below. The largest percentage of subsidence hotspots occurs in Centurion at 20.97 %, followed by West Rand and Kuruman 3 at 13.99%, and then N8\_2 at 9.28 %. The number of subsidence hotspots for most areas is less than 5 %. The high percentage of Kuruman 3 may be due to this area having the lowest results coverage since this percentage does not correlate with the visual results. Whether this graph is an indication of subsidence severity and the possibility of sinkhole formation remains unclear; however, it is known that Centurion is the area with the highest risk of sinkhole formation as is reflected here.

In general, it was found that upon visual inspection, the areas with the largest number of subsidence hotspots occur in the Gauteng Province compared to the North West and Northern Cape Provinces. It is important to remember that the data result coverage differs for each area because of the gaps caused

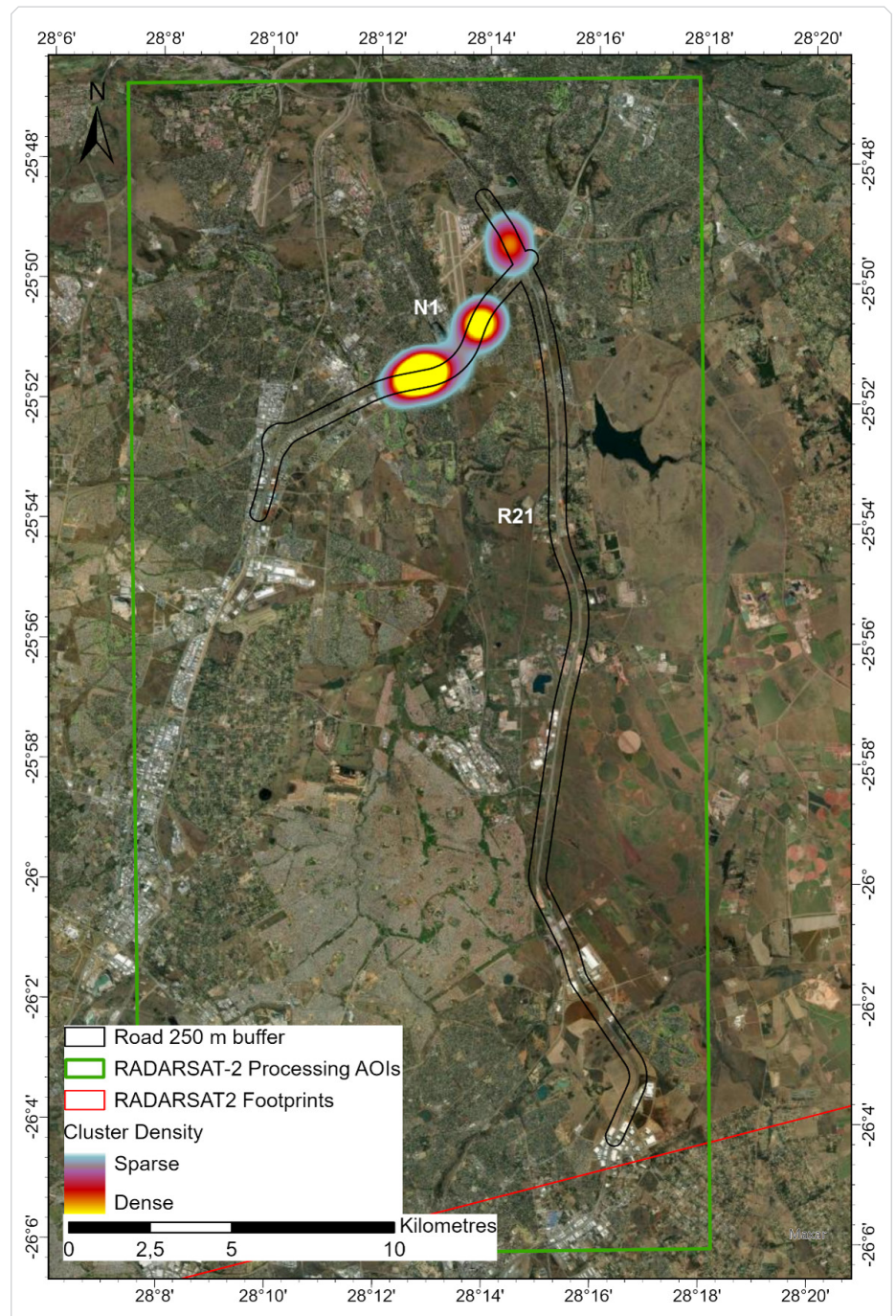


Figure 1. Centurion cluster density map of classes 1 and 2 indicating subsidence hotspots along the N1 and R21. The density symbology is locked at a radius of 25 and a fixed scale of 1: 100 000.

by low coherence values during SBAS processing which leads to a bias in the interpretation results.

There is a correlation between the high RMSE, low coherence values, and low mean subsidence values, with the exception of N8\_1. The low RMSE values also correlate with the two lowest-class cluster density zones or subsidence hotspots. The subsidence value ranges do not indicate the severity of subsidence

in an area but may indicate point locations that need further investigation. Gauteng has the most variability in terms of the SAR stats, specifically the average mean subsidence, RMSE, and coherence, and the area with the largest percentage of subsidence hotspots occurs in Centurion at 20.97 %. Overall, InSAR is a useful tool for detecting subsidence over time, and high-resolution imagery yields accurate results.



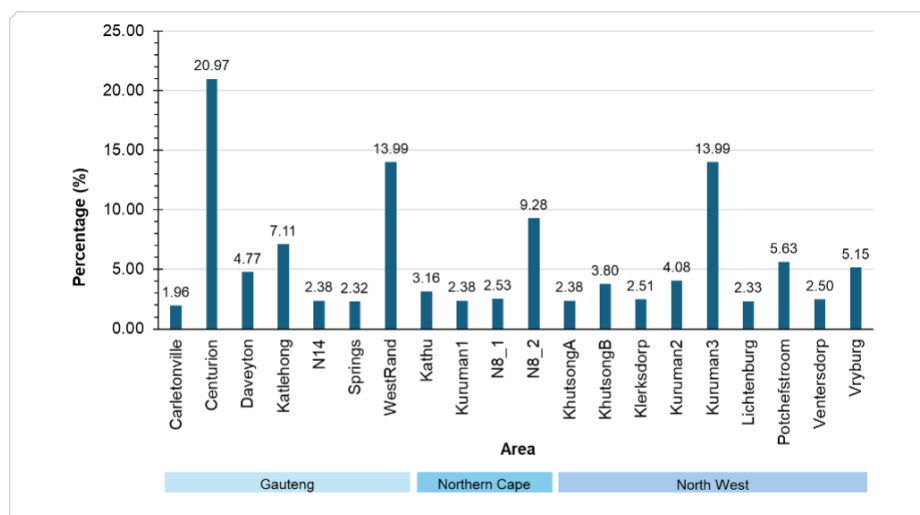


Figure 2. A graph with the percentage distribution of the subsidence hotspots for each area per province

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## Social events at the CGS Bellville office 2024

### WOMEN'S DAY 2024

Beginning on 9 August 2024, National Women's Day, South Africa celebrated the women of this country. In commemoration of this day, the Council for Geoscience Bellville office celebrated in style and solidarity, recognising the women in the office and their role and impact on science and society. Traditionally, the day involved women gathering and hosting different functions, to foster relationships in the workplace and society as well as building healthy and enjoyable working environments. A "High Tea" themed event was held at the Bellville office, with everyone dressed to impress, wearing their finest hats as an ode to the theme (Figure 1).

Although the day is usually only celebrated by women, our male counterparts were also in attendance and celebrated the day together while adhering to the theme and dress code (Figure 2).

High Tea was selected as a theme because it allowed the colleagues an opportunity to dress up and enjoy a formal setting and culinary delights. This was an opportunity to break away from the norm of a working day while celebrating togetherness and refinement and being transported to a world of charm and sophistication. Figure 3 below is a collage of the day's event, showcasing the food, the décor and the high fashion.

The boardroom was decorated with delicate tea sets, soft linens and flowers to bring about the charm of the occasion. Highlights of the event included serving of an assortment of teas (with flavours including chai, ginger, chamomile, and even Turkish delight), finger foods and desserts where served, as well as some festive music and a bit of dancing. This event was the first of its kind to be held at the Bellville office and it was a roaring success, hoping to set the stage for many more in the future.

### HERITAGE DAY 2024

Heritage Day in South Africa is celebrated on the 24<sup>th</sup> of September every year, to commemorate and recognise the country's diverse cultural heritage. The Bellville office participated in this celebration through a showcase of different variations of food, traditional attire and a show-and-tell performance (see Figure 4 below). The event showcases cultural diversity and promotes social cohesion and a spirit of peace and reconciliation in the office environment.



Figure 1: A group photograph of the colleagues in the Bellville office; L-R is Mr. Khululekile Isaac, Ms. Eloise Ely, Ms. Cynthia Yanta, Ms. Marcelene Voigt, Ms. Yasmeen Fortune, Ms. Lebogang Nhleko, Ms. Haajierah Mosavel, Ms. Liesl Adams, Mr. Edowe Domingo, Ms. Nokuthula Booi, Ms. Zine Masoka, Mr. Adriaan Williams, Ms. Chiedza Musekiwa, Ms. Zinzi Phikiso, Mr. Philile Diko, Mr. Sashan Manikam, Mr. Azukile Mpahlwa, and Ms. Wahieba Daniels (crouched in the front).





**Figure 2:** The dashing gentlemen of the office, L-R is Mr. Wilhelm Van Zyl, Mr. Adriaan Williams, Mr. Khululekile Isaac, Mr. Sashan Manikam, Mr. Azukile Mpahlwa, and Mr. Edowe Domingo.



**Figure 3:** A collage of pictures of the high tea event showcasing the fashion, food and atmosphere.



**Figure 4:** Bellville office colleagues in their colourful cultural and traditional attire.

There were a variety of cultural decorations on corners and tables, a unique photography booth, with different food and dessert tables. On one of the 'cultural corners' a display of the different cultures and heritage at the CGS, with colleagues in the Bellville office highlighting their diverse languages from the varying ethnic groups represented at the CGS including English, Afrikaners, Coloureds, Shona, Xhosa, Tswana, Indian, Cape Malay, and Khoisan (Figure 5). These diverse cultures, languages and ethnic groups were well represented in the variety of traditional or customary foods shared on this Heritage Day.





Figure 5: A collage of the different 'cultural corners' with displays of the different cultures in the CGS Bellville office.

Some examples in the savoury traditional foods on offer included a delicious chicken curry, pot bread, savoury bread wheel, *magwinya* (fat cakes) and mango *atchar*, ox tongue, *ulusu* (ox tripe and intestines), chicken gizzards, chicken *masala* gatsby, steak *masala* roti gatsby, *mawtwana* (chicken feet), chicken wings, *chakalaka* (spicy vegetable relish), *umvubo* (crumb pap and *amasi* (sour fermented milk), and even a creamy mussel pot.

The dessert table comprised a lovely lemon meringue cake, carrot cake, peppermint tart, marshmallow tart, and payasam (Indian dessert) (Figure 6).

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Figure 6: A collage of pictures of the different food types enjoyed at the office, celebrating the diverse cultures.

"We would like to sincerely apologise for the oversight in our previous publication, where "Social events at the CGS Bellville office 2024" and "The 51<sup>st</sup> International Association of Hydrogeologists Congress in Davos, Switzerland" were unintentionally omitted.

We understand the importance of this content and regret any inconvenience this may have caused to our readers"

**If you would like to be added to the CGS mailing list, please send an e-mail to:**

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