SANIRE
SOUTH AFRICAN NATIONAL INSTITUTE OF ROCK ENGINEERING

WEBINAR FREE OF CHARGE

Forensic Rock Mechanics for the Analysis of Rockbursts and Seismicity in Mines

Gerrie van Aswegen
Consultant: Mine Seismology, Structural Geology
Institute of Mine Seismology

SESSION 1
Wednesday, 7 July 2020
13:00 - 14:00

SESSION 2
Wednesday, 21 July 2020
13:00 - 14:00

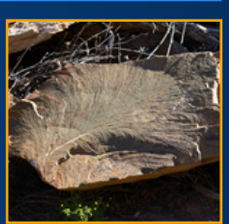
SESSION 1 SOME BASICS

Fundamentals of rock deformation and failure
- Ductile – brittle
- Pure shear – simple shear
- Uni-axial - tri-axial

Faulting and shear
- Anderson's classification
- Kinematic indicators
- Relation with stress orientation

Stress in mines
- Neotectonics
- "Virgin" stress
- Locked in stress

Extension fracturing
- Fractography
- Stress fractures
- around stopes
- around tunnels
- Significance of curved extension fractures



SESSION 2 ROCKBURSTS AND SEISMICITY

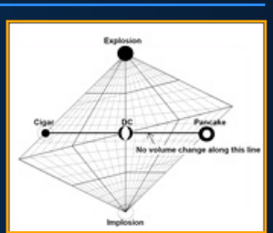
Seismic events - slip
- Hypocentre
- Area slipped
- Focus of maximum displacement

Seismic events - non-DC
- Implosion
- Explosion
- Pancakes

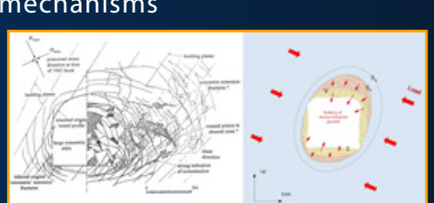
Rockbursts
- Conducive conditions
- Classification / nomenclature
- Strain burst
- Face burst
- Pillar burst
- Fault slip
- Dyke burst ...

Forensic dynamic rock mechanics
- What moved?
- When?
- Which way?
- Why?

Moment tensors
- simple definition
- relation to actual source mechanism
- usefulness for stress orientation



Modelling source mechanisms



RSVP TO REGISTER

Mbalenhle Buthelezi
011 568 2054
mbalenhleb@mpas.org.za