

Advances in geophysical technologies for the exploration and safe mining of deep gold ore bodies in the Witwatersrand basin, South Africa

Durrheim RJ, Vogt D, Manzi

¹CSIR. Centre for Mining Innovation

²University of the Witwatersrand, Johannesburg, South Africa

Abstract

Gold is currently mined at depths reaching 4km in the Witwatersrand basin of South Africa. Geophysical techniques have been used to explore for new resources, and to design and operate mines efficiently and safely. We report on recent advances in technologies for 3D reflection seismics, borehole radar, and rock mass monitoring.