

volcaniclastics in the Cuddapah basin. This volume is precious piece of history.

- 3) Half a million scale geological map of Andhra Pradesh was released on the occasion. This probably completes the publication of ½ M scale geological maps of all the States of Southern India, which is a feather in GSI's cap.

S.K. Majumder, Sr. D.D.G. of Southern Region and

his able band of officers and staff (particularly U.C. Pati, Convener) deserves kudos for the seminar's success. Ravi Shanker, D.G., GSI delivered the Presidential Address and ably conducted the valedictory session. On the whole, it will remain a memorable symposium for years to come.

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COMPUTER-BASED MINERAL DEPOSIT MODELLING IN KOLAR GOLD MINES - BGML EXPERIENCE

A.K. Talapatra (Jour. Geol. Soc. India, v.57, pp.231-237, 2001) has cited three Precambrian mineralized belts situated in Rajasthan (Pur-Banera-Bhinder belt), Bihar (Hesatu-Belbatan belt) and West Bengal (Purulina-Bankura belt) where application of mineral belt modelling with qualitative data was tried. This helped him to identify clusters of "control cells" containing base metals and other minerals. According to him, this study has further shown a few "barren cells" tending to cluster with control cells. Hence he feels that it is possible to locate a few potential areas within the barren cells. Talapatra recommends using this method with available geological variables in conjunction with the available geochemical and geophysical variables. It would have been more useful had Talapatra cited at least one case study with details to appreciate his techniques using qualitative data.

We wish to share the experience of Bharat Gold Mines Ltd. (BGML) on a somewhat similar exercise undertaken by an expert group during 1981-83 for locating blind ore shoots in the unexplored and underexplored parts of Champion Lode in Kolar gold mines. Champion Lode is 8 km long on the surface along N-S strike and is only 500 m long at 3.2 km depth where the mining operations have been suspended because they are uneconomic.

The study by the expert group involved the following aspects: Value distribution and population statistics, polynomial trend analysis, gradient analysis, edge detection studies, harmonic trend analysis, auto correlation and semi-variogram analysis, Markov chain analysis, maximum entropy method of spectral analysis, fast Fourier transform method, trend surface analysis, exploratory data analysis (EDA), probability mapping and simulation, and study of spectral variation.

The findings of the computer aided study are: In the test areas I and II, nine unstopped areas were identified as possible sites for locating ore shoots between 26th and 48th levels (2500 to 4800 ft depth) and the predictions were as follows:

Method Used	Predicted grade
Population statistics	> 60 inch dwf
Semivariogram	high nugget effect with poor values
Polynomial trend analysis	>60 inch dwf in 50% of the area
Harmonic trend analysis	>70 inch dwf in most of the area
Neighbourhood simulation	100-320 inch dwf
Markov chain	partly prospective up to 100 inch dwf

In the test area near Oorgaum mine at the sites recommended by the expert group, BGML drilled 4 diamond drill holes. Contrary to the expectation of the R&D team, the results were totally disappointing. Hence BGML did not carry out further drilling at the other sites recommended by the expert group.

An important experience of this study was the realization that any geostatistical and computer modelling of ore body carried out in total isolation of basic geological inputs viz., lithology, structure, control of mineralisation, variation of grades, enrichment of ore and behaviour of lode with depth is bound to be sterile. This work should be a lesson for all others who wish to use geostatistics for modelling of vein type of deposits, like Kolar, Hutti, HCL and HZL etc.

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