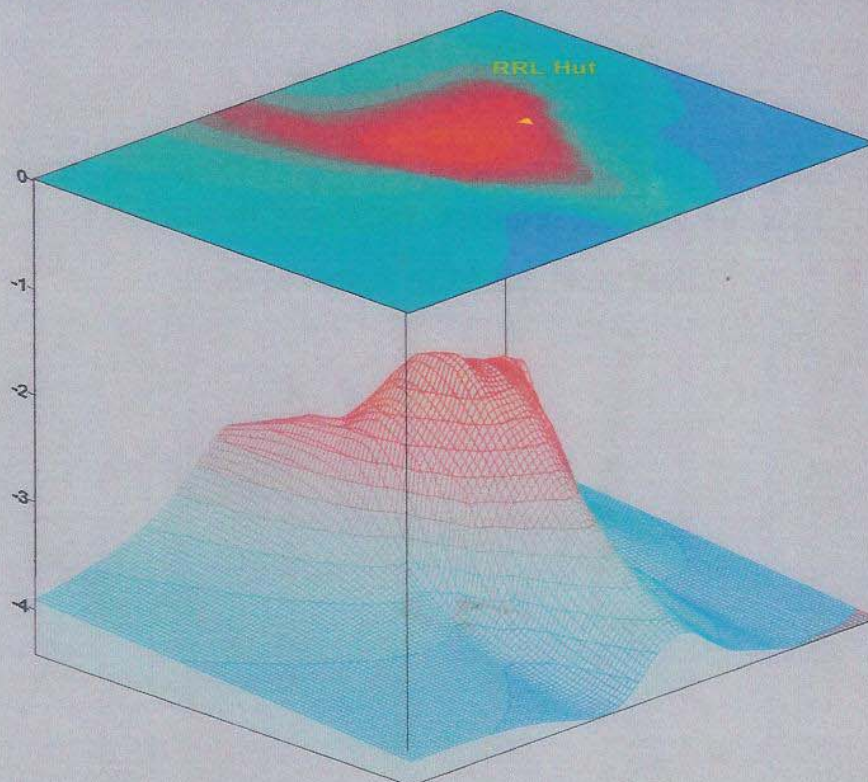


# MAGNETOTELLURIC INVESTIGATIONS IN PUGA GEOTHERMAL REGION, LADAKH DISTRICT, JAMMU & KASHMIR, INDIA

PROJECT SUPPORTED BY

MINISTRY OF NONCONVENTIONAL ENERGY SOURCES  
GOVERNMENT OF INDIA, NEW DELHI



NATIONAL GEOPHYSICAL RESEARCH INSTITUTE  
HYDERABAD - 500 007  
INDIA  
2003

**MAGNETOTELLURIC STUDIES IN PUGA  
GEOHERMAL REGION, LADAKH DISTRICT,  
JAMMU and KASHMIR, INDIA**

**Project supported by**

**Ministry of Non-Conventional Energy Sources,  
Government of India, New Delhi**

**National Geophysical Research Institute,**

**Hyderabad - 500 007**

**India.**

**January, 2003**

## **PARTICIPANTS**

**T. Harinarayana**

**D.N. Murthy**

**S. Prabhakar E. Rao**

**K.Veeraraswamy**

**K.K. Abdul Azeez**

**C. Manoj**

**K. Naganjaneyulu**

**R.S. Sastry**

**M.V.C. Sarma**

**G. Virupakshi**



## ABSTRACT

Four major thermal manifestations in India have been recognised, in which Himalayan belt forms the most important region from the viewpoint of potential for geothermal energy. A total of 72 locations have been identified in various groups of hot springs located in different places along the Himalayan belt. Among these, Puga hot spring region is recognised as the most promising one from geological, shallow geophysical and borehole data. Although its importance is known, deep crustal signatures and the parameters of Puga geothermal reservoir are poorly estimated and documented. To understand the crustal structure and to delineate anomalous features, if any, related to geothermal reservoir, deep geophysical studies are important.

With a view to image the deep geoelectric structure, a wide band magnetotelluric (MT) study has been taken up in Puga valley. A total of 35 stations have been covered with a close station interval of 0.5 to 1 km. Since the area of study is relatively away from civilization, no man made noises are in the vicinity. This has provided an opportunity to get high quality MT data. The data have been subjected to qualitative and quantitative interpretation. In the present study, a high conductive zone in the valley towards west of Sumdo village has been delineated. The conductive zone shows a shallow conductor (100-500m) underlain by a resistive structure followed by another deep conductor (1.5 to 2 km). The parameters of shallow and deep conductive zones and its relation to the presence of geothermal reservoir is analysed.