

**GOVERNMENT OF INDIA
ATOMIC ENERGY
LOK SABHA**

UNSTARRED QUESTION NO:379
ANSWERED ON:24.02.2010
NEUTRINO OBSERVATORY
Rathod Shri Ramesh

Will the Minister of ATOMIC ENERGY be pleased to state:

- (a) whether the Government proposes to set up a Neutrino Observatory in the country;
- (b) if so, the details thereof;
- (c) the likely benefits to the country after establishment of this observatory; and
- (d) the funds earmarked and allocated for this project?

Answer

MINISTER OF THE STATE IN THE MINISTRY OF SCIENCE & TECHNOLOGY AND EARTH SCIENCES (INDEPENDENT CHARGE), PMO, PERSONNEL, PUBLIC GRIEVANCES AND PENSIONS AND PARLIAMENTARY AFFAIRS. (SHRI PRITHVIRAJ CHAVAN):

(a) Yes, Sir.

(b) The India based Neutrino Observatory (INO) is proposed to be set up through the Department of Atomic Energy and Department of Science & Technology. The project includes construction of a world class underground laboratory under a rock cover of at least 1200 m from all directions. This underground laboratory will be accessed by 7.5 meter wide tunnel of approximately 2 km in length. The primary goal of INO is to study neutrino properties. Determination of neutrino properties is one of the most significant open problems in Physics today. Such studies will help in understanding the interactions among subatomic particles at very small length scale, in this underground laboratory a massive 50 kton particle detector will be installed to study the cosmic ray produced neutrinos.

(c) The project will put India back on the world-map of underground science, a position that was held by India a few decades earlier, it is to be noted that the first ever detection of neutrino produced by cosmic rays took place in an underground laboratory at Kolar Gold Fields, South India. Apart from doing front ranking work in the field of neutrino physics, this project will help in (i) development of human resource in basic science research, (ii) contributing to the creation of highly skilled scientists for particle physics and nuclear physics, (iii) using the particle detectors to be developed for this project for other applications in areas like medical imaging.

(d) The estimated cost of the project is Rs.915 crore. The project is currently awaiting the forest clearance from the State Government of Tamil Nadu. After receiving the clearances, cabinet approval will be obtained to start the construction work.