IceCube: Exploring Neutrinos from Earth's South Pole

Source: TH

The IceCube neutrino observatory at the E**arth's South Pole** detected subatomic particles called **neutrinos.**

- Neutrinos are **electrically neutral, undisturbed by even the strongest magnetic field,** and rarely interact with matter, earning the nickname **"ghost particle."** As neutrinos travel through space, they pass unimpeded through matter - stars, planets and, for that matter, people.
- A neutrino is a **fermion** (an elementary particle with spin of ½) that **interacts only via weak interaction and gravity.**
- They are created in nuclear processes and also created when protons (subatomic particles) and (atomic) nuclei interact at very high energies.
- The ability **to use particles like neutrinos in astronomy** enables a more robust examination of the universe as many aspects of the universe are indecipherable using light alone.
- **India-based Neutrino Observatory (INO)**: The INO Project is aimed at building a world-class underground laboratory with a rock cover to conduct basic research on neutrinos.
    - The observatory will be located underground to provide adequate shielding to the neutrino detector from cosmic background radiation.

Read More- Pillars of Creation, James Webb telescope**,** Indian Neutrino Observatory