

IceCube: Exploring Neutrinos from Earth's South Pole

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The IceCube neutrino observatory at the Earth'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

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