

# Detection of Astrophysical Tau Neutrinos with IceCube

*martedì 18 giugno 2024 17:30 (2 ore)*

The IceCube Neutrino Observatory at the South Pole has sensitivity to all three active neutrino flavors created by atmospheric and astrophysical sources, spanning six orders of magnitude in energy. Using ten years of data and convolutional neural networks to identify astrophysical tau neutrino morphologies, we detected seven tau neutrino candidates on an estimated background of approximately 0.5 events, dominated by other astrophysical neutrino flavors. The estimated average energy of the candidate tau neutrinos is approximately 200 TeV. This is the first high-significance measurement of astrophysical tau neutrinos, and the most energetic tau neutrino candidates ever observed.

## Poster prize

No

## Given name

Doug

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Cowen

## First affiliation

Penn State

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## Gender

Male

## Collaboration (if any)

IceCube

**Autore principale:** Prof. COWEN, Doug (IceCube Collaboration)

**Relatore:** Prof. COWEN, Doug (IceCube Collaboration)

**Classifica Sessioni:** Poster session and reception 1

**Classificazione della track:** Astrophysical neutrinos