



- **Tau neutrinos  $\nu_\tau$**

- Only 19  $\nu_\tau$  CC interactions are directly observed.
- Super-K, IceCube: oscillated  $\nu_\tau$ :
  - ▶ *relative appearance rates* and don't give precise cross-section constraints.
- No measurements for  $E > 250$  GeV.

# • Muon neutrinos $\nu_\mu$

- Accelerator data: up to 360 GeV.
- IceCube: above 6.3 TeV (large uncertainties).
- Gap between 360 GeV – 6.3 TeV remains unexplored.

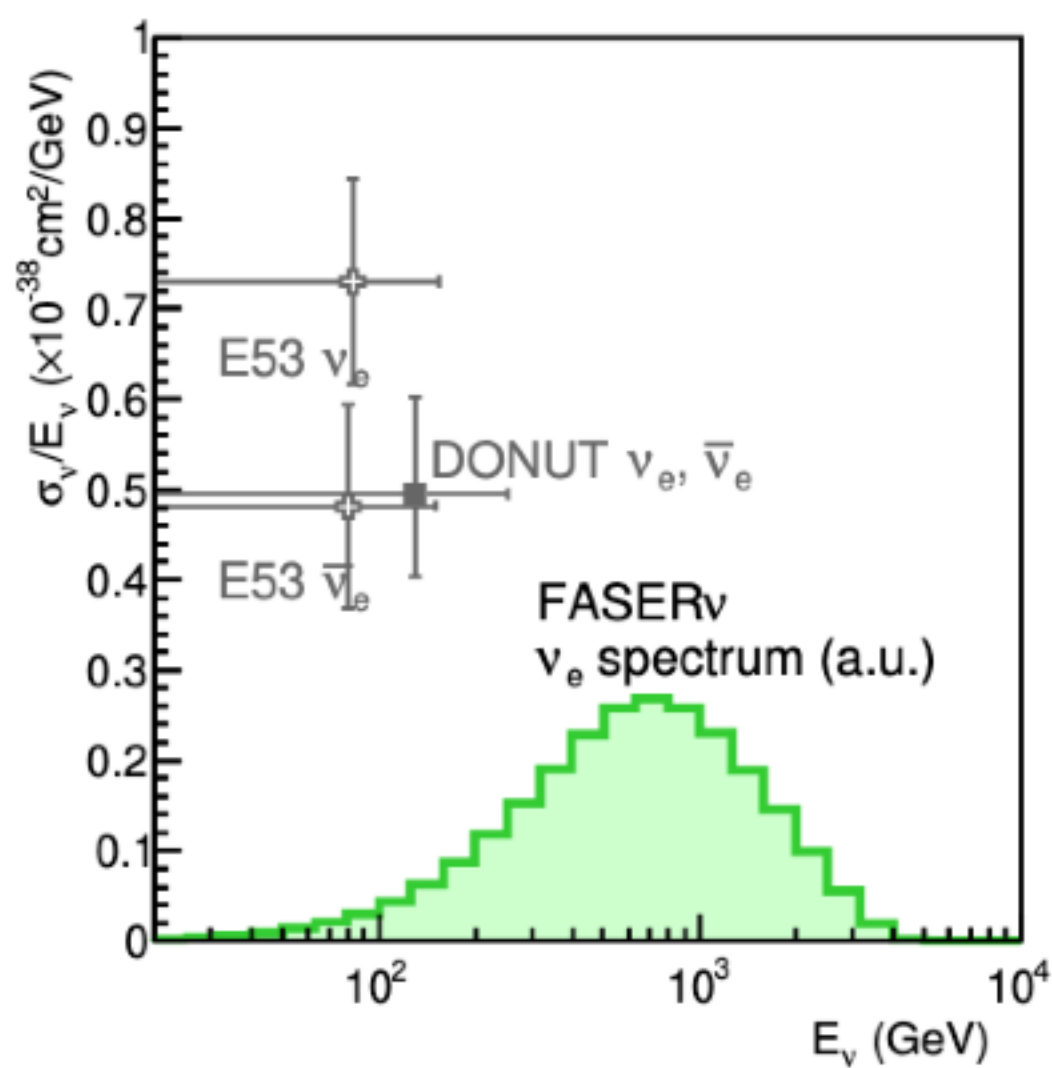
- **Electron neutrinos  $\nu_e$**

- Gargamelle: up to 12 GeV.
- E53 & DONuT: up to ~200 GeV.
- No direct data above 250 GeV.

**Cool, but Why?**

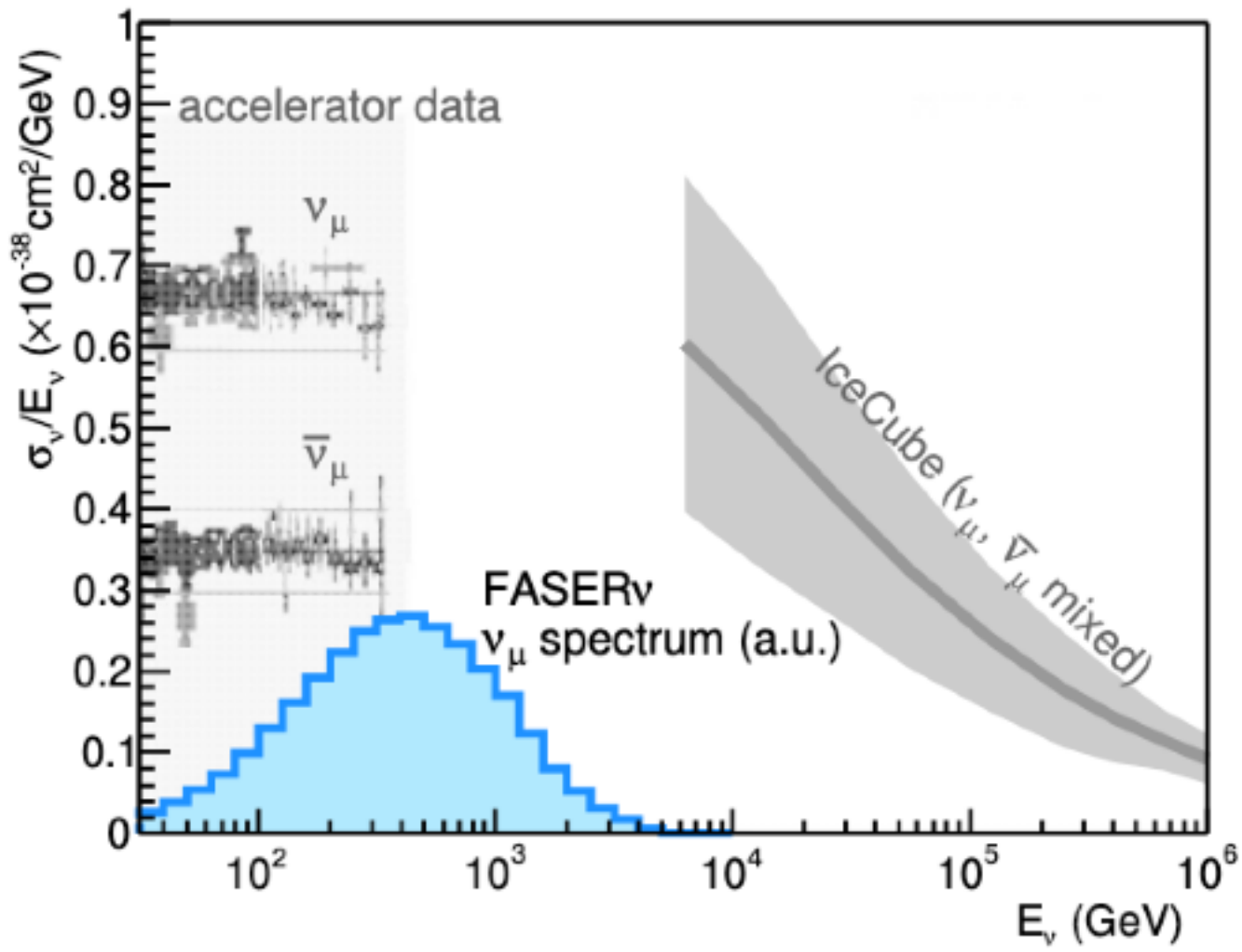
# Neutrino Physics



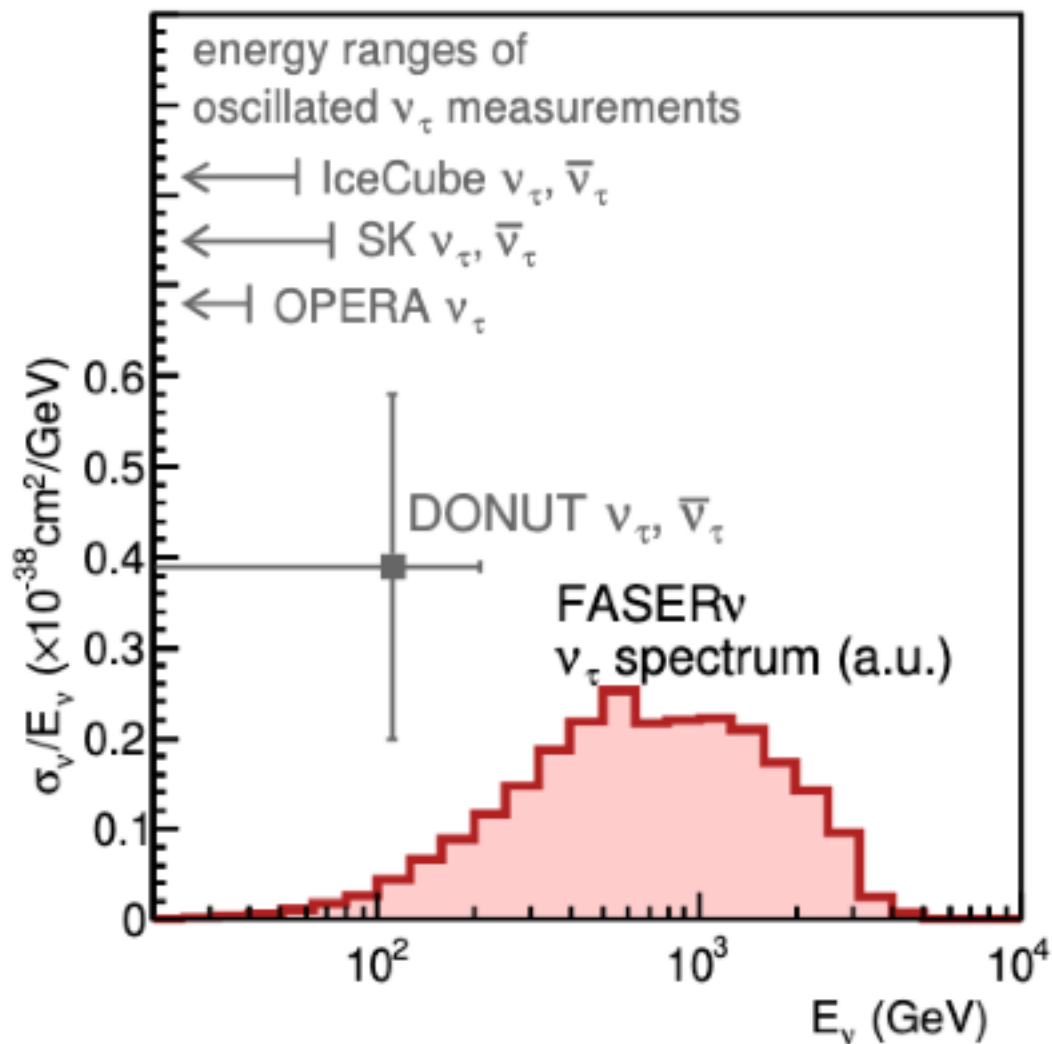
















[Unit Kose: A New Frontier with FASER. ETH-IPAC Equin Presentation]

*Primary goal: select and measure different neutrino flavors at TeV energies*

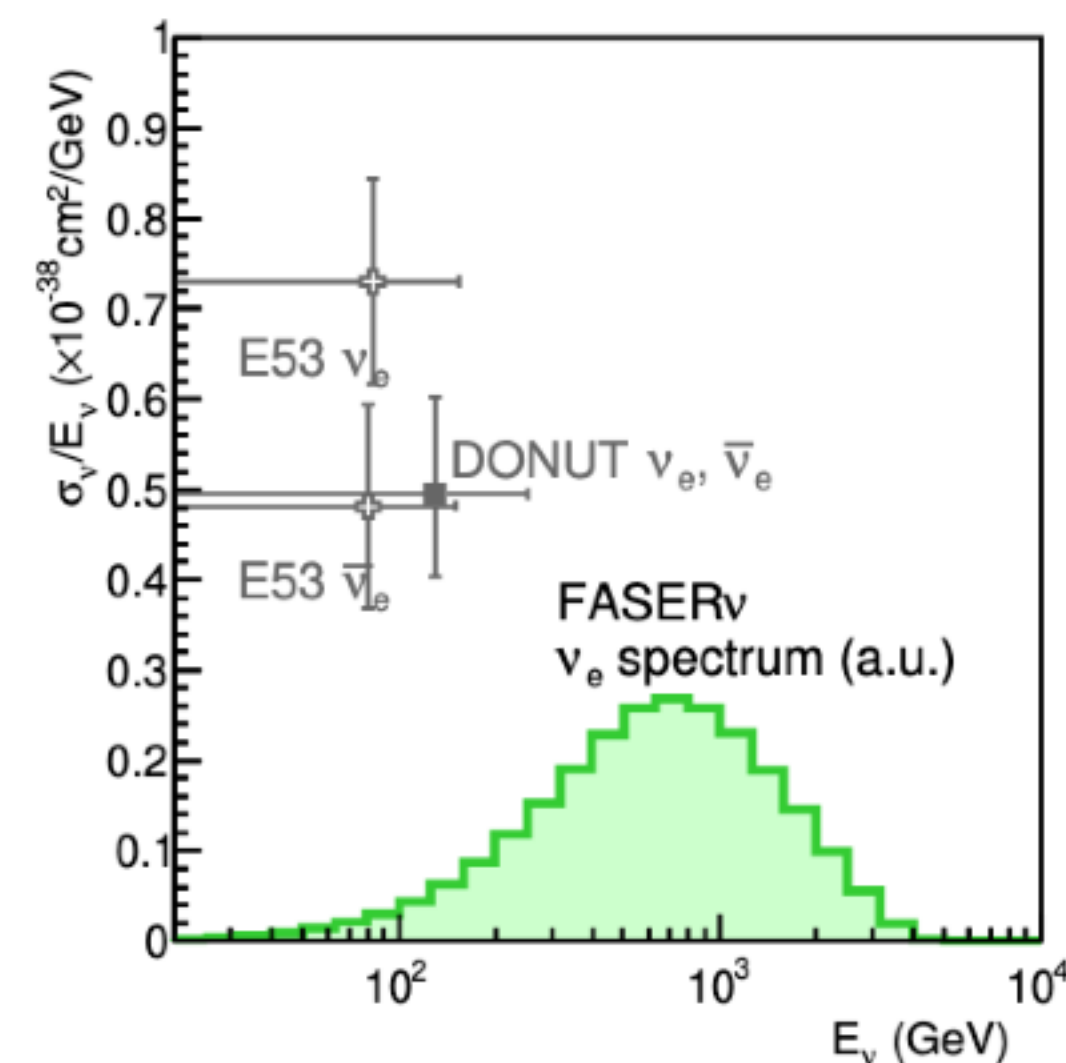
# Cool, but Why?

## Neutrino Physics

**Primary goal:** cross section measurements of different neutrino flavors at TeV energies.

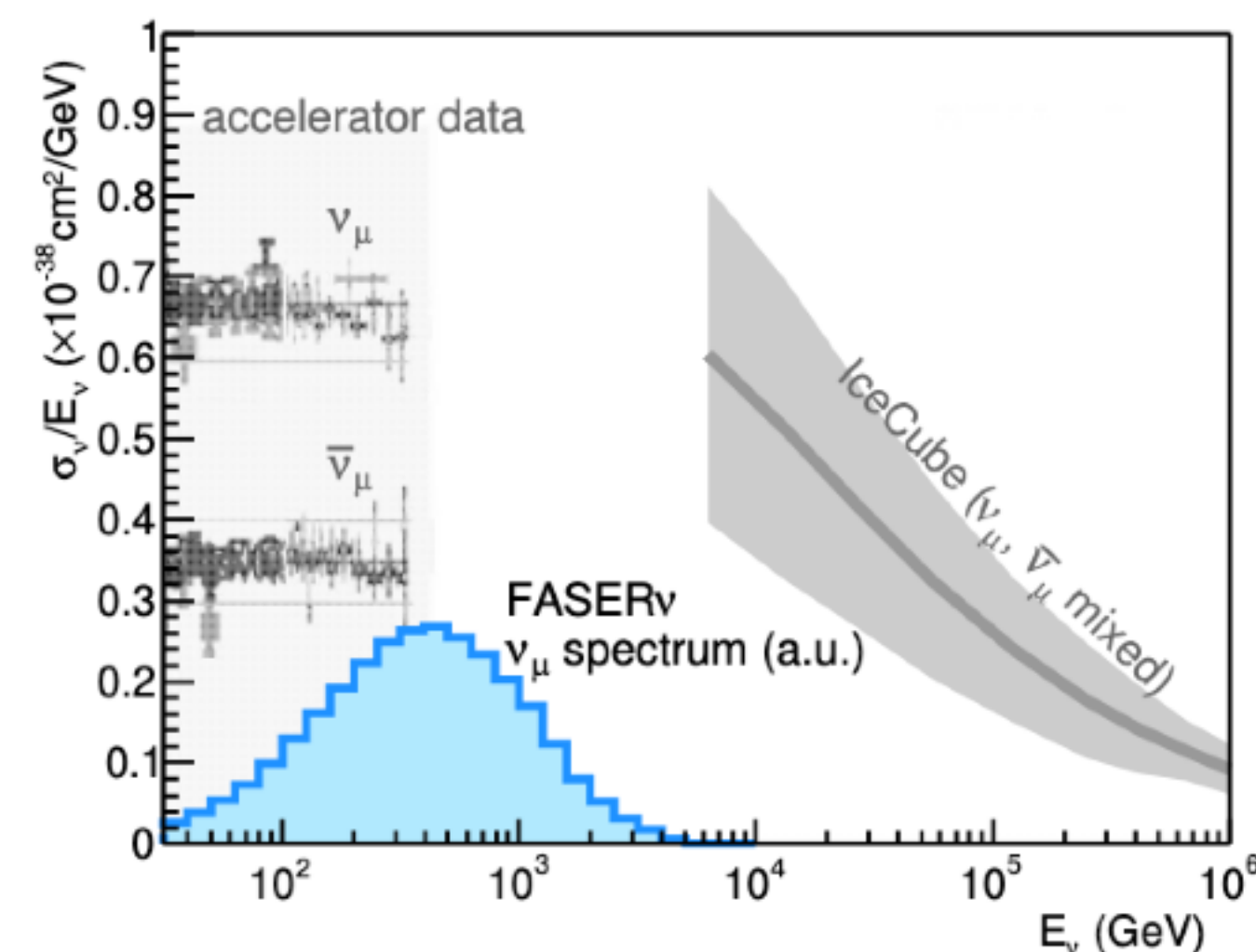
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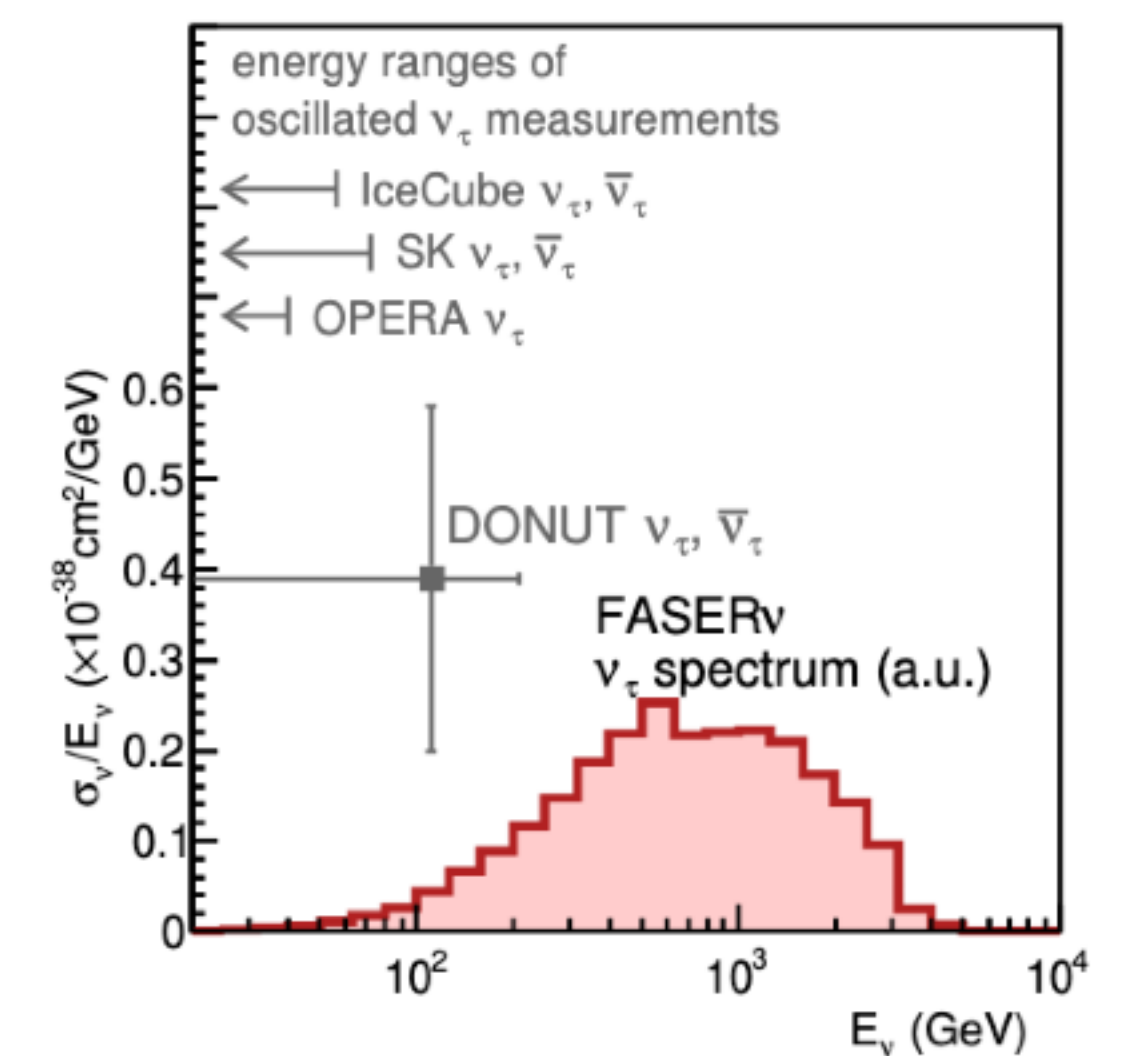
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# Methodology

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