Neutrino Astrophysics with MACRO

- Satellites and ground-based Imaging Telescopes $\Longrightarrow$ $\boxed{\gamma - ray \text{ sources @ GeV-TeV energies}}$
- IF: γ from electromagnetic processes $\Longrightarrow$ no ν
- IF: γ from Astrophysical Beam Dump $\Longrightarrow$

  (Gaisser-Halzen-Stanev, Phys. Rep.258,173(1995))

  – ν_μ-flux with the same luminosity of the γ-rays.

  – $\Phi_\nu \sim E^{-(2 \div 2.5)}$

  – $(10^{-3} \div 10^{-2}) \uparrow \mu/y$ in MACRO
- Background: Atmospheric neutrinos.
- ν_μ oscillations $\Longrightarrow$ BAD news for ν-astronomy