

# FINAL RESULTS ON ATMOSPHERIC NEUTRINO OSCILLATIONS WITH MACRO

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The MACRO detector has measured more than 850 upward throughgoing muons induced by neutrinos of mean energy around 50 GeV since 1989 to 19 Dec. 2000 when the acquisition ended. Final results on neutrino oscillations are shown, favoring a  $\nu_\mu \rightarrow \nu_\tau$  scenario with maximal mixing and  $\Delta m^2 \sim 2.5 \cdot 10^{-3}$  eV<sup>2</sup> versus either no oscillations and  $\nu_\mu \rightarrow \nu_{sterile}$  oscillations.