

# Proceedings of the Madagascar 2nd High-Energy Physics International Conference

**HEP-MAD 04**

**Antananarivo, Madagascar  
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**Editor : Stephan Narison**

Laboratoire de Physique Theorique et d'Astrophysique (LPTA)  
CNRS - Montpellier - France  
and

Institute of Astro - High-Energy Physics (i@HEP-MAD)  
Antananarivo - Madagascar

**Organizers :**

Laboratoire de Physique Theorique et d'Astrophysique (LPTA)  
CNRS - Montpellier - France

Institute of Astro - High-Energy Physics (i@HEP-MAD)  
Antananarivo - Madagascar

Presidence of the University of Antananarivo - Madagascar

## Opening Ceremony

**1 -Introduction by the Chairman of the Conference**

**Stephan Narison**

**2- Speech by the Dean of the Faculty of Sciences (Antananarivo)**

**Bruno Andrianantenaina**

**3 -Speech by the President of the University (Antananarivo)**

**Pascal Rakotobe**

## Astrophysics and Electroweak Interactions

**4 -High-energy cosmic rays**

**Oscar Adriani**

**5 -Time evolution of coupling constants**

**Harald Fritzsch**

**6 -Neutrino properties and violation of lepton (baryon) flavors**

**Peter Minkowski**

**7 -Neutral and charged current cross-section measurements and search for new physics at HERA**

**Nick Malden**

## Detectors, B and K Physics, QCD Phenomenology

**8 -The LHCb vertex detector**

**Barinjaka Rakotomiaramananana**

**9 -The CMS silicon tracker: Overview and Status**

**Bruno Wittmer**

**10 -Review of Recent BABAR results**

**Luca Lista**

**11- Kaons and Hyperons rare decays by the NA48 experiment at CERN**

**Massimo Lenti**

**12 -Recent results at CDF**

**Ambra Gresele**

**13 -New Hadron Spectroscopy from QCD Spectral Sum Rules: heavy-light mesons and pentaquarks**

**Stephan Narison**

## **Nuclear Physics and Environment**

**14 -Quartz glow-peaks lifetime analysis: Tl glow-curve deconvolution functions for first order of kinetic compared to Initial Rise Method**

**A. Ratovonjanahary**

**15 -Radon progenies as a source of gross alpha-beta activities in drinking water in Vinaninkarena, Antsirabe-Madagascar**

**N. Rabesiranana**

**16 -Trace element and Physico-chemical quality of the well waters in Mahitsy, Province of Antananarivo, Madagascar**

**M. Rasolofonirina**

**17 -2H, 3H and 18O tracers used to study the vulnerability of sedimentary aquifers to contaminants in the South-West of Madagascar**

**J. Rajaobelison**

**18 -Determination of the maximal Lyapunov exponent of a dynamical system using artificial neural network: application to the study of the environmental radioactivity of Antananarivo**

**R. Raboanary**

## **Physics of the Atmosphere**

**19 -Contribution to the simulation of the orographic out-flow over Madagascar using a three dimensional model to mesoscale**

**O. Ramiharintanahary**

**20 -Intraseasonal variation of tropical convection over the Mozambique Channel and possible link with extra tropical circulation.**

**Z. Rabefitia**

## **Closing**

**21 -Speech by the Vice-President of the University (Antananarivo)**

**M. Rakotomalala**

## **Thanks**