



# Memorandum of Understanding

between

International Center for Relativistic Astrophysics Network (ICRANet)

and

Leung Center for Cosmology and Particle Astrophysics (LeCosPA)

Regarding Collaboration on

## Cosmology and Particle Astrophysics



The Leung Center for Cosmology and Particle Astrophysics at National Taiwan University (hereinafter referred to as "LeCosPA") and the International Center for Relativistic Astrophysics Network (hereinafter referred to as "ICRANet") (hereinafter jointly referred to as the "Parties"), with the desire to cooperate in the field of cosmology, high-energy and relativistic astrophysics have agreed as follows:

## 1. INTRODUCTION

### 1.1 General Description

This Memorandum of Understanding (hereinafter referred to as "MOU") is an agreement between the Parties on the collaborative work in cosmology, high-energy and relativistic astrophysics.

The two parties have the similar aspiration and programs that cover a large part of the emergent field of cosmology, high-energy and relativistic astrophysics. They intend to strengthen their ties around specific projects of common interest and through regular exchange of long-term and short-term visits.

## 2. GENERAL AGREEMENTS

### 2.1 Funding

Unless otherwise agreed by the Parties in writing, each Party shall be responsible for funding its agreed scope of work. The ability of the Party to carry out their responsibilities under this MOU shall be subject to the availability of appropriate funds.

### 2.2 Amendments

MOU may be amended or extended by written agreement between the Parties.

## 3. SPECIFIC AGREEMENTS

### 3.1 Scope of Responsibility

The Parties agree to collaborate on the research topics relating to cosmology, high-energy and relativistic astrophysics.

The topics may include but are not limited to:

- (1) Black hole physics in all scales and eras,
- (2) Theory and implications of dark energy and dark matter in cosmology
- (3) Large scale structure formation and evolution of the universe,
- (4) Ultra-high energy cosmic rays and neutrinos and the cosmic accelerator that produces them,
- (5) Gamma ray bursts,
- (6) Fundamental theories of classical and quantum gravity.
- (7) Physics of Neutron Stars and compact objects



### 3.2 Scientific Personnel



The scientific personnel involved in the collaboration will be members of the Parties. One form of this collaboration shall be the exchange of visits between members of the Parties at all levels. The personnel exchange may include but not limited to the following functions:

- (1) Work-related visits of members of the Parties who are engaged in specific theoretical or experimental collaborative projects,
- (2) General purpose long-term (months) or short-term (days) visits of members, especially post-docs and graduate students, for enrichment,

### 3.3 Statement of Work

The Parties agree to work on subjects of common interest, exchange information, develop theory, experiments and equipment of value to their mutual interests in subjects under Article 3.1 above.

Each Party shall designate a contact person. Contact persons shall hold meeting, in principle, on yearly basis to coordinate tasks carried out by the Parties. Regarding such details as specific goals, packages of work, schedules and responsible individuals, the contact persons may exchange letters for the coordination.

### 3.4 Equipment Ownership

All equipment items bought or fabricated using ICRANet funds will be the property of ICRANet and will be capitalized by ICRANet. All equipment items bought or fabricated using LeCosPA funds will be the property of LeCosPA and will be capitalized by LeCosPA.

### 3.5 Publications

Papers and publications may result from this work. The LeCosPA contributions will be formally acknowledged in ICRANet publications. All publications and all intellectual property developed or created under this MOU using ICRANet funds are subject to its funding agency procedures. Similarly, the ICRANet contributions will be formally acknowledged in LeCosPA publications. All publications and all intellectual property developed or created under this MOU using LeCosPA funds are subject to National Taiwan University and Ministry of Science and Technology.

### 3.6 Intellectual Property

“Intellectual Property” includes but is not limited to inventions, technical data and software. Intellectual property developed or created exclusively by one Party shall be the intellectual property of that Party. Intellectual property developed or created by collaboration between the Parties shall be the joint intellectual property of both Parties. The disposition of the rights on intellectual property thus developed or created shall be carried out in such a manner as to reflect each Party’s contributions thereto.

Rights with regard to commercialization of intellectual property exclusively developed or created by one Party shall be retained by that Party; commercialization of intellectual property jointly developed or created by the Parties shall be jointly pursued. With regard to the above intellectual property, whenever the rights of the Taiwanese (ROC) Government or the Italian Government are set out in its independent contracts with National Taiwan University or ICRANet respectively, this MOU shall not affect such rights.

*pc*      *RL*



### 3.7 Information Use

Neither Party assumes any liability with respect to the accuracy and sustainability of any information transmitted under this MOU for any particular use or application. The Party transmitting the information shall not be responsible for any property damage or personal injury that the receiving Party, its government, and its contractors have incurred by the use or application of such information developed, exchanged or transmitted between the Parties.

## 4. EXECUTION

### 4.1 Effective Date

This MOU shall become effective upon the latter date of signature of the Parties. It shall remain in effect for five years or until superseded, whichever occurs first. This MOU may be terminated at any time at the discretion of either Party, with six months advance notification in writing by the Party seeking to terminate this MOU.

### 4.2 Legal Basis

This MOU are prepared and signed in English and Chinese versions. In case there occurs any difference in its interpretation, the English version shall be the basis.

IN WITNESS WHEREOF, the undersigned, duly authorized, have signed this Memorandum of Understanding.

FOR  
INTERNATIONAL CENTER FOR  
RELATIVISTIC ASTROPHYSICS  
NETWORK

FOR  
LEUNG CENTER FOR  
COSMOLOGY AND  
PARTICLE ASTROPHYSICS

Signature:

Signature:

Remo Ruffini  
Director

Pisin Chen  
Director

Date

July 15, 2015

Date

July 15, 2015