



*entropy*



an Open Access Journal by MDPI

## Modified Gravity: From Black Holes Entropy to Current Cosmology

Guest Editors:

**Dr. Kazuharu Bamba**

Faculty of Symbiotic Systems  
Science, Fukushima University,  
Fukushima 960-1296, Japan

**Prof. Dr. Sergei D. Odintsov**

1. Institució Catalana de Recerca  
i Estudis Avançats (ICREA),  
Passeig Lluís Companys, 23,  
08010 Barcelona, Spain  
2. Institute of Space Sciences  
(ICE-CSIC), C. Can Magrans s/n,  
08193 Barcelona, Spain

Deadline for manuscript  
submissions:

**closed (20 September 2012)**

### Message from the Guest Editors

In this special issue, we discuss the application of thermodynamics to the test of a successful alternative gravitational theory to general relativity. Through this procedure, we can obtain a clue to resolve the dark energy problem “geometrically”. It is considered that any successful modified gravity theory should obey the second law of thermodynamics. If the second law is violated in certain universes in a model, it is more likely to be due to an incorrect generalization of the second law or some inherent inconsistency of the model itself. For the latter case, the model should be abandoned. It is strongly expected that the considerations of this special issue can produce our new physical understanding on entropy in the context of the relation between thermodynamics and gravitation and shed light on novel ingredients as well as insights on modern cosmology, in particular new properties of dark energy.



[mdpi.com/si/1620](http://mdpi.com/si/1620)

# Special Issue



# entropy



an Open Access Journal by MDPI

## Editor-in-Chief

### **Prof. Dr. Kevin H. Knuth**

Department of Physics, University  
at Albany, 1400 Washington  
Avenue, Albany, NY 12222, USA

## Message from the Editor-in-Chief

The concept of entropy is traditionally a quantity in physics that has to do with temperature. However, it is now clear that entropy is deeply related to information theory and the process of inference. As such, entropic techniques have found broad application in the sciences.

*Entropy* is an online open access journal providing an advanced forum for the development and/or application of entropic and information-theoretic studies in a wide variety of applications. *Entropy* is inviting innovative and insightful contributions. Please consider *Entropy* as an exceptional home for your manuscript.

## Author Benefits

**Open Access:** free for readers, with [article processing charges \(APC\)](#) paid by authors or their institutions.

**High Visibility:** indexed within [Scopus](#), [SCIE \(Web of Science\)](#), [Inspec](#), [PubMed](#), [PMC](#), [Astrophysics Data System](#), and [other databases](#).

**Journal Rank:** JCR - Q2 (*Physics, Multidisciplinary*) / CiteScore - Q1 (*Mathematical Physics*)

## Contact Us

---

Entropy Editorial Office  
MDPI, St. Alban-Anlage 66  
4052 Basel, Switzerland

Tel: +41 61 683 77 34  
[www.mdpi.com](http://www.mdpi.com)

[mdpi.com/journal/entropy](http://mdpi.com/journal/entropy)  
[entropy@mdpi.com](mailto:entropy@mdpi.com)  
[X@Entropy\\_MDPI](#)