



## The Dark Universe Conference Heidelberg, 04th - 07th October 2011

### Overview

**An international Conference of the Transregional Research Center TRR33 'The Dark Universe' Bonn-Heidelberg-Munich (funded by the DFG) at Heidelberg University on the occasion of its 625<sup>th</sup> anniversary.**

### Topic

The current picture of our universe has emerged from a remarkably successful combination of cosmological theory and a wide range of observations. After the discovery of an accelerated expansion of the late-time universe from distant supernovae in 1998, independent observations of the cosmic microwave background and of the large-scale distribution of galaxies have supported and strengthened the overall picture.

In the standard cosmological model, normal baryonic matter contributes only roughly 5% to the overall density, the rest being in the form of dark matter (23%) and dark energy (72%). Whereas dark matter has already been postulated by Zwicky in 1933, the existence and dominance of dark energy was unexpected and raised fundamental questions as e.g. the range of validity of Einstein's gravity, the role of extra dimensions, the existence of new forces, the nature of vacuum, the relation to the inflationary field and to the particle physics models.

The conference will bring together theoreticians and observers from particle physics, cosmology and astrophysics, to present and discuss the latest research results in the fields of dark matter and dark energy, and to indicate new paths for future research.

Several topical plenary talks will be selected from among the applicants. There are no parallel sessions. Ample space for posters close to the conference hall is available.

The conference talks and posters will be published on a maintained webpage, no formal proceedings are planned.

#### Scientific Advisory committee:

L. Amendola (chair), M. Bartelmann, R. Bender, E. Copeland, R. Durrer, A. Hebecker, H. P. Nilles, P. Schneider, S. Seitz, V. Springel, C. Wetterich

#### Local organizing committee:

L. Amendola, M. Bartelmann, R. Catena, N. Nunes, I. Sawicki, T. Weigand, G. Wolschin

### Invited Speakers

S. Allen  
C. Baccigalupi  
M. Baldi  
P. Binetruy  
S. Borgani  
R. Caldwell  
J. M. Cline  
E. Copeland  
C. De Rham  
R. Durrer  
G. Dvali  
M. Frandsen  
L. Hall  
T. Hambye  
E. W. Kolb  
K. Koyama  
M. Kowalski  
M. Kunz  
O. Lahav  
B. Leibundgut  
J. Lesgourgues  
A. Maccio'  
J. March-Russell  
M. Pietroni  
S. Profumo  
R. Schnee  
C. Skordis  
D. N. Spergel  
V. Springel  
S. Tsujikawa  
M. Tytgat  
J.-P. Uzan  
K. Zurek

