Conference on Shedding Light on the Dark Universe with Extremely Large Telescopes

2 - 6 July 2018
Trieste, Italy

Further information:
http://indico.ictp.it/event/8320/
smr3218@ictp.it

The next decade promises to be transformative for our understanding of dark matter and dark energy. The dark universe is a major scientific driver of several major astronomical facilities that have just become operational, are in construction, or in the planning stages. In the same timeframe, the next generation of giant (20-30m) optical infrared ground based telescope will achieve first light, providing scientists general observer facilities of unprecedented power.

This is the third of a series of three conferences, the previous ones held in Lanzhou (China) and UCLA (USA). For further information:
https://conferences.pa.ucla.edu/dark-universe/index.html

Topical sessions will be dedicated to specific topics and techniques that have already been identified as areas where giant telescopes will enable fundamental progress (Clusters of galaxies, Supernovae, Near Field Cosmology, Strong lensing, Lyman alpha Forest). In addition we plan a session dedicated to synergy with other facilities and one dedicated to theory.

These conferences will bring together an international group of experts addressing the following questions:

- What are the most promising observations that will be enabled by giant telescopes? What capabilities are required?
- What are the key synergies between giant telescopes and other facilities? What are the areas and topics where a concerted effort will yield far superior results than the sum of all parts?
- What theoretical work is needed in preparation for first light? What are the limitations in our understanding that need to be overcome?
- What calculations are required in order to make testable predictions and interpret the results of future astronomical observations?

It is extremely important to answer these questions now, while the plans for giant telescopes can still be influenced, and there is still sufficient time to carry out preparatory theoretical and observational work that will be needed to make the most of these investments.

Organizers:

M. BERNARDI, UPenn
S. BORGANI, Trieste Observatory
P. CREMINELLI, ICTP
R. DAVE', Royal Observatory Edinburgh
A.A. SEN, Jamia Millia Islamia, India
R. SHETH, UPenn
T. TREU, UCLA
S. VEGETTI, MPA Garching
M. VIEL, SISSA

Speakers include:

M. BERNARDI, UPenn
R.A. BERNSTEIN, The Carnegie Observatories
S. BORGANI, Trieste Observatory
M. BRADAC, UCDavis
T. R. CHOUDHURY, TIFR
M. CIRASUOLO, European Southern Observatory
F. COURBIN, LASTRO EPFL (*)
S. CRISTIANI, Trieste Observatory
A. DI CINTIO, U. of Copenhagen
E. DI VALENTINO (U. of Manchester)
C. J. DUMAS, TMT International Observatory
S. GILLENSSEN, MPE Garching
I. HOOK, Lancaster U.
J.P. KNEIB, LASTRO EPFL
L. MACRI, Texas A&M U.
J. McKEAN, ASTRON/Kapteyn Astronomical Institute
Y. MELLIER, IAP
S. PROFUMO, UCSC
P. ROSATI, UNIFE
R. SANDERSON, Caltech
A. SLOSAR, Brookhaven
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M. VIEL, SISSA
M. VOGELSBERGER, MIT
A. VON DER LINDEN, Stony Brook (*)
J.K. WEBB, U. of New South Wales
B. WILLMAN, LSST (*)

(*) to be confirmed

How to apply:

Online application:
http://indico.ictp.it/event/8320/

Female scientists are encouraged to apply.

Grants:

A limited number of grants are available to support the attendance of selected participants, with priority given to participants from developing countries. There is no registration fee.

Deadline:

30 April 2018

INFN Istituto Nazionale di Fisica Nucleare

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