

**Memorandum of Understanding
between**

**The Regents of the University of California
and
Deutsches Elektronen-Synchrotron
Concerning Cooperation on Photon Science and Technology
and Particle Physics and Astrophysics**

This Memorandum of Understanding (MOU) is between The Regents of the University of California (The Regents), in its capacity as manager and operator of the Lawrence Berkeley National Laboratory (LBNL). The Lawrence Berkeley National Laboratory is a U.S. Department of Energy National Laboratory managed and operated by The Regents pursuant to Contract No. DE-AC02-05CH11231;

and

Deutsches Elektronen-Synchrotron (DESY), a German research center supported by public funds.

For purposes of this MOU, LBNL and DESY are collectively referred to as "Participants" or separately as "Participant."

1. Objective and Areas of Planned Cooperation

a. The objective of this MOU is to establish a framework for proposed cooperation between the Participants to explore collaborative projects in one or more of the following areas:

- I. Synchrotron radiation .
- II. Free Electron Lasers
- III. Accelerator physics and technology
- IV. Particle physics
- V. Astrophysics and the analysis of the collected data
- VI. Theoretical Physics

b. The areas of planned cooperation may be changed or extended to other areas by mutual written consent of the Participants.

2. Potential Future Collaboration

If the Participants later decide to undertake specific joint projects, they intend to develop written agreements therefor, setting out each Participant's contribution, deliverables, responsibilities, schedule, budgets, and any other items necessary for the efficient and effective achievement of such projects.

3. Designated Representatives

To administer the implementation of this MOU, each Participant should designate principal coordinators through whom all requests and plans of that Participant are to be made. The designated representatives are:

A. For LBNL -

- a. With respect to areas I – III of section (1.)(a.) above: Peter Denes, Acting Director NGLS Initiative
- b. With respect to areas IV – VI of section (1.)(a.) above: Natalie Roe, Physics Division Director

B. for DESY -

- a. With respect to areas I – III of section (1.)(a.) above: Edgar Weckert, Photon Science Director
- b. With respect to areas IV – VI of section (1.)(a.) above: Joachim Mnich, Particle/Astroparticle Physics Director

or other designees as appointed by LBNL and DESY from time to time.

4. General Considerations

- A. This MOU does not create any legally binding obligations.
- B. Each Participant should conduct the cooperation under this MOU in accordance with all applicable laws, regulations and other requirements to which it is subject, including, without limitation, export control laws and environment, health and safety laws and regulations.
- C. The conduct of cooperative activities contemplated by this MOU is subject to the availability of funding, personnel, and other resources.
- D. Each Participant is responsible for the costs it incurs in participating in cooperative activities under this MOU.

5. Commencement, Modification and Duration

- A. Cooperation under this MOU may commence upon signature by the Participants and continue for five years, unless discontinued in accordance with paragraph C of this section 5.
- B. This MOU can be modified or extended in writing at any time by the Participants' mutual consent.
- C. The Participants may discontinue this MOU at any time in writing. A Participant that wishes to discontinue its participation in this MOU should endeavor to provide at least thirty (30) days written notice to the other Participant.

Signed in duplicate.

THE REGENTS OF THE UNIVERSITY
OF CALIFORNIA, LAWRENCE
BERKELEY NATIONAL
LABORATORY

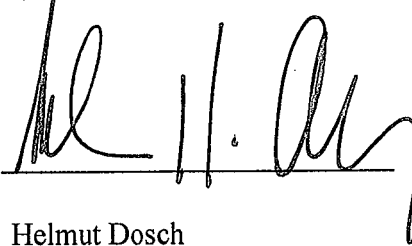
By: 

Name: A. Paul Alivisatos

Title: Laboratory Director

Date April 18 2013

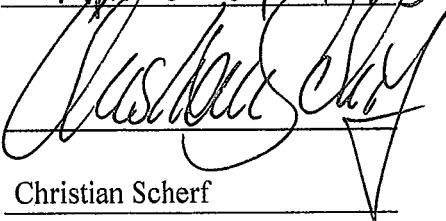
DEUTSCHES
ELEKTRONEN-SYNCHROTRON

By: 

Name: Helmut Dosch

Title: Chairman of the Board of
Directors

Date April 18, 2013

By: 

Name: Christian Scherf

Title: Administrative Director

Date April 18, 2013