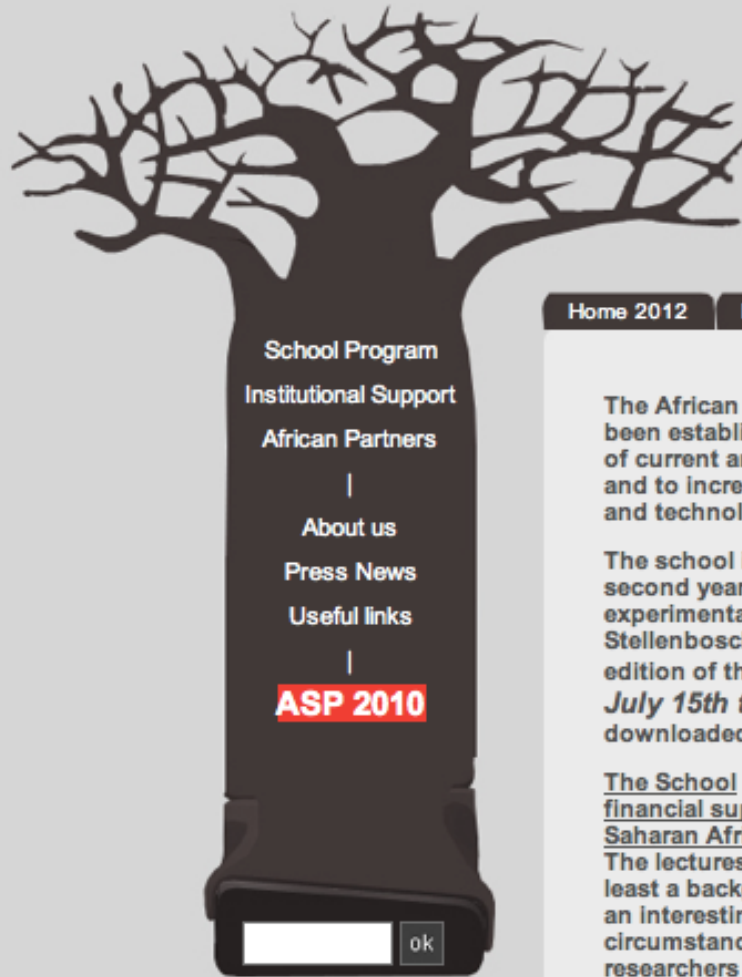DOSAR

OSG Grid Workshop
in KNUST, Kumasi, Ghana
August 6-8, 2012

following the

AFRICAN SCHOOL OF FUNDAMENTAL
PHYSICS AND ITS APPLICATIONS
July 15-Aug 04, 2012

The African School of Fundamental Physics and its Applications 2012

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The African School of Fundamental Physics and its Application has been established to build capacity to harvest and interpret the results of current and future physics experiments with particle accelerators, and to increase proficiency in related applications, such as medicine, and technologies, such as IT.
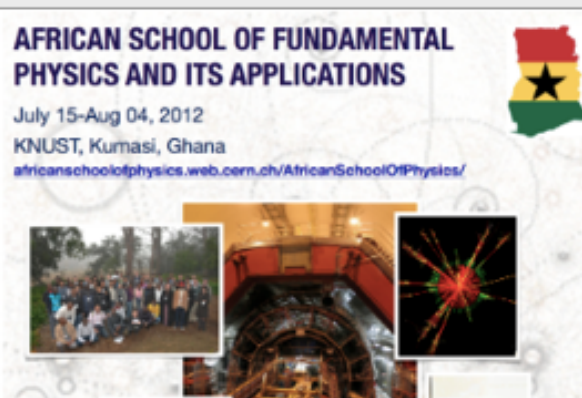
The school is being organized in a Sub-Saharan African country every second year and it is based on a close interplay between theoretical, experimental, and applied physics. The first school took place in Stellenbosch, South Africa on 1-21 August 2010 and the second edition of the biennial school in *KNUST, Kumasi, Ghana from July 15th to Aug 4th 2012*. The poster of the school can be downloaded here: PDF/JPEG

The School is a non-profit organization, which provides partial or full financial support to 50 of the selected students, with priority to Sub-Saharan African students.
The lectures are addressed to students in Fundamental Physics with at least a background of 4 years of university formation. Lectures may be an interesting complement for PhD academic lectures. Depending on circumstances we may consider opening the school to young researchers as well.

AFRICAN SCHOOL OF FUNDAMENTAL PHYSICS AND ITS APPLICATIONS

July 15-Aug 04, 2012
KNUST, Kumasi, Ghana
africanschoolofphysics.web.cern.ch/AfricanSchoolOfPhysics/

ASP2012 Webpage

DOSAR

- In conjunction with ASP2012, the Distributed Organization of Scientific and Academic Research (DOSAR) proposes to offer a three-day grid computing school in Ghana on Aug. 6 – Aug. 8 at KNUST.
- DOSAR has partnered successfully in the past with institutions in Brazil and South Africa to establish customized grid sites and conduct tutorials on grid applications and operation.
- We have used the OSG software stack to establish these fully operational sites.

DOSAR

- Since the African School focuses on increasing proficiency in physics and related applications such as information technology, through our partnership, we would like to reach many students within Ghana and other African countries with emphasis on grid computing installation, maintenance, and applications.
- DOSAR envisions a partnership that both includes and reaches beyond student education.
- This grid computing school would help build a scientific computing cloud within Ghana and will enhance the partnership by bringing in open source software to run grid applications for academic scientific research, including collaboration with LHC experiments and their high energy physics work.

DOSAR

- In order to maximize the effectiveness of the grid computing school, preceding the African School, we would assess the existing facilities and suggest any necessary additions.
- We would then aid in the installation of the software needed to run grid applications and the suggested hardware.
- We propose to host a workshop to build expertise in Ghana on expanding and maintaining the grid site a week adjacent to the African School of Physics.
- Sessions on these topics would also be presented at the African School, including presentations designed for students by DOSAR experts.

DOSAR

- The grid school curriculum will focus on the OSG approach to grid computing, in a good balance between lectures and hands-on practices.
- The content of this school is very general and open to everyone involved in science and is willing to learn how to use grid computing to improve their research performance.
- The school's curriculum is designed for PhD students, senior investigators, and scientific team leaders.
- In order to ensure the effectiveness of the school, students will be required to have some basic knowledge of Linux commands.
- We are coordinating with the ASP organizers and KNUST collaborators to secure a room with a sufficient number of computers.

DOSAR

- **DAY 1: The Basics**
  - 09:00 - 09:30 Welcome and Introduction
  - 09:00 Introductions, Welcome & Logistics
  - 09:15 Overview of the workshop
  - 09:30 – 10:00 Use of Computing Grid in Tevatron Experiments
  - 10:00 – 10:30 Use of Computing Grid in LHC Experiments
  - 10:30 - 10:45 Coffee break
  - 10:45 - 11:45 Introduction to OSG Grid computing
  - 11:45 - 13:00 Introduction to OSG Grid Computing (II)
  - 13:00 - 14:30 Lunch
  - 14:30 - 16:00 Getting ready – Part I
    - 14:30 Installing the client
    - 15:30 Getting a grid certificate from DOE
  - 16:00 - 16:15 Coffee break
  - 16:15 - 17:30 Getting ready – Part II: Joining a VO
  - 17:30 - 18:00 Security on the Grid

DOSAR

- **DAY 2: Job Management and the Use of Grid Computing**
  - 09:00 - 10:45 Introduction to Job Management
  - 09:00 Discovery, Match Making and Brokerage
  - 10:00 Introduction to Condor-G
  - 10:30 - 10:45 Coffee break
  - 10:45 - 12:30 Running jobs on the Grid: hands-on
  - 12:30 - 14:00 Lunch
  - 14:00 - 15:30 Combined Lecture: Turning science problems into High Throughput Computing (HTC) jobs + Decomposing and running large jobs
  - 15:30 - 15:45 coffee break
  - 15:45 - 17:30 Pilots-based frameworks
  - 15:45 Introduction to pilots
  - 16:00 glideinWMS
  - 16:30 glideinWMS: hands-on

DOSAR

- **DAY 3: Data Management**
  - 09:00 - 10:30 Storage and Data Management
  - 09:00 Storage, File Catalogs, and Data Transfer
  - 10:30 - 10:45 Coffee break
  - 10:45 - 12:30 Data Management: hands-on
  - 12:30 - 14:00 Lunch
  - 14:30 - 15:30 GOC services from the point of view of Users.
  - 16:00 - 17:00 Lecture: Expanding the HTC horizon with High Throughput Parallel Computing
  - 17:00 - 17:30 Survey and Discussions

DOSAR

- FastLane Proposal 1219715 submitted last week to NSF for travel support

- The proposed list of U.S. personnel to be supported by this proposal is:
  - Horst Severini, University of Oklahoma (expert in ATLAS grid computing and OSG International Outreach Co-coordintor)
  - Joel Snow, Langston University (expert in Dzero grid computing)
  - Jose Caballero, Brookhaven National Laboratory (OSG International Outreach Coordinator)
  - Tanya Levshina, Fermi National Accelerator Laboratory (OSG Storage services)
  - Robert Quick, Indiana University - Purdue University Indianapolis (Grid Operations services)
  - Alain Roy, Univ. of Wisconsin, Madison (OSG Software)
  - Julia Gray, Stony Brook University (Overall Organization)
  - Zeno Dixon Greenwood, Louisiana Tech University (Organizer)
  - Patrick Skubic, University of Oklahoma (Lecturer in use of grid in D0)
  - Jae Yu, University of Texas at Arlington (Lecturer in use of grid in ATLAS)

- **About DOSAR http://www.dosar.org/**
- The **D**istributed **O**rganization for **S**cientific and **A**cademic **R**esearch (DOSAR) is a 'grass-roots' grid organization that focuses on community and campus based grids and promotes a wide range of interdisciplinary and educational activities within the organization and its member institutions.
- **Research**
- ATLAS and U.S. ATLAS
- CMS
- D∅
- **Projects**
- coLinux-based Condor Pool; Grid computing outreach
- **DOSAR Members**
- Bellarmine University
- Iowa State University
- University of Johannesburg
- Langston University
- Louisiana State University (CCT)
- Louisiana Tech University
- University of Mississippi
- University of Oklahoma
- Universidade Estadual Paulista (UNESP) (SPRACE, GridUNESP)
- University of South Alabama
- Susquehanna University
- University of Texas at Arlington

Science that is being enabled

- HEP: D0, ATLAS, CMS
- Paleontology
- Cluster development