



Dear Colleagues

Invitation from the Department of Science and Innovation (DSI): South African Basic Sciences Platform (SABSPlat); SA-CERN Collaboration Programme: SA-ATLAS; and South African Institute of Physics (SAIP) - 10th anniversary of the Higgs Boson discovery

As you know, the 10th anniversary of the Higgs Boson discovery will be celebrated this coming July 4th, 2022. CERN is organizing an activity:

<https://indico.cern.ch/event/1135177/>

which is split into two sessions. The morning session is celebratory, the afternoon more technical.

The celebration of this historical event coincides this year with the International Year of the Basic Sciences for Sustainable Development (IYBSSD 2022). The DSI in partnership with ASSAf, UNESCO and Learned Societies in South Africa (including SAIP) will be hosting a series of events to celebrate the IYBSSD 2022.

In order to give the necessary prominence to the anniversary of the Higgs discovery and celebrating the relevance and impact of the Basic Sciences, DSI came to the realization that the SAIP Annual Conference 2022 would provide an excellent platform (SAIP being a leading Learned Society and member of the Department of Science and Innovation's Platform for Basic Sciences) to showcase these events. In this regard, things came together almost naturally because the opening session of the SAIP 2022 Annual Conference is on 4th July 2022 and the organizers agreed to accommodate the Higgs celebration in the opening session.

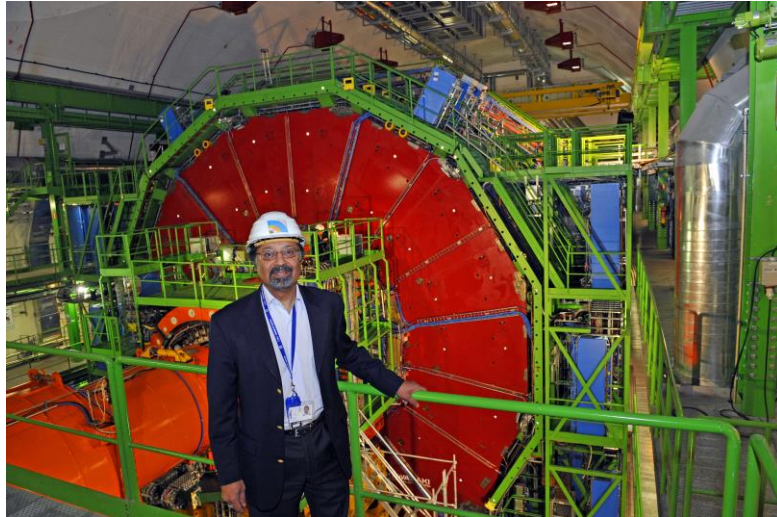
The DSI facilitated the invitation of a prominent speaker to present at the afternoon session of SAIP 2022. The DSI is very happy to inform you that Prof Sir Tejinder Singh Virdee of Physics at Imperial College, London has kindly agreed to present at SAIP2022. Please find attached his bio and abstract.

The SA-ATLAS team was part of the research affords that led to the Higgs discovery in 2012 and should be proud to be part of the 10th anniversary celebration. All SA-CERN Programme researchers and students and the South African Physics and science community in general are therefore invited to participate in the SAIP session of 4th July 2022.

<https://events.saip.org.za/event/225/page/447-invited-plenaries>

<https://events.saip.org.za/event/225/timetable/?view=nicecompact>

Biography: Prof. Sir Tejinder Singh Virdee, FRS



Tejinder Virdee is Professor of Physics at Imperial College, London. Over the last 30 years Tejinder has concentrated on the physics and experimentation at CERN's Large Hadron Collider. He is one of the two founding fathers of the Compact Muon Solenoid Collaboration (CMS) at the LHC and has played a major role in all phases of the experiment, from conception and design, through construction to the extraction of science. He was involved in almost all the key scientific and technical choices made for the experiment. He pioneered some of the techniques used in the discovery of the Higgs boson announced by the CMS experiment in July 2012, along with the sister experiment ATLAS.

Tejinder was the Spokesperson (Leader) of the CMS Collaboration for three years, from 2007, a period that included the start of collision data taking, and was its Deputy Spokesperson from 1993 to 2006.

Tejinder's current work involves studies of the newly found Higgs boson, search for physics beyond the standard model of particle physics and the design of the upgrades of the CMS detector for very high luminosity LHC running that is due to start in mid-2020's.

Amongst the prizes he has won is the 2009 UK Institute of Physics (IOP) Chadwick Medal and prize, the 2013 European Physical Society-HEPP prize, the 2013 Fundamental Physics Prize, the 2015 IOP Glazebrook Medal and Prize, the 2017 American Physical Society Panofsky Prize, and the 2020 Blaise Pascal Medal of the European Academy of Sciences.

Tejinder was elected to the Fellowship of the Royal Society in 2012 and was made Knight Bachelor in the 2014 Queen's Birthday Honours List.

Tejinder is passionate about promoting the benefits of science and its importance in society. He funds diverse and impactful educational and scientific activities in schools and universities in Africa, India and the UK, and projects in sub-Saharan African countries, through the Virdee Grants, in collaboration with the UK Institute of Physics.

Wikipedia: https://en.wikipedia.org/wiki/Tejinder_Virdee

Abstract

'The Discovery of the Higgs boson'

At the Large Hadron Collider (LHC) at CERN, Geneva we can probe our Universe moments after the Big Bang to tackle the questions about its origin, evolution and composition. These include: What is the origin of mass? What constitutes dark matter? How many dimensions of space and time do we live in? Why is the universe composed of matter and not antimatter? The answers have the potential of altering our perception of how Nature operates at the fundamental level. The discovery in July 2012 of the Higgs boson at the Large Hadron Collider (LHC), one of the most important of this new century, completes the particle content of the standard model (SM) of particle physics, a theory that describes our visible universe in exquisite detail. This talk will describe the long journey to the discovery of the Higgs boson, briefly recalling the physics aims, outlining some of the technological and engineering challenges faced during construction, and the making of the discovery itself. The talk also will discuss the prospects for the high-luminosity operation of the LHC, especially those related to the examination of the properties of the Higgs boson with larger data samples.