



TECHNISCHE
UNIVERSITÄT
DRESDEN

Institut für Kern- und Teilchenphysik

aQGC Workshop Dresden

Welcome and information

Michael Kobel



Dresden, 30.09.2013

HELMHOLTZ ALLIANCE
PHYSICS AT THE TERASCALE

PHYSICS AT THE TERASCALE
HELMHOLTZ ALLIANCE

**Anomalous Quartic
Gauge Couplings**

30 September -
2 October 2013
TU Dresden

Topics

- $W^+W^- \rightarrow VV \rightarrow VV$
- Theory status of $W^+W^- \rightarrow VV$
- $W^+W^- \rightarrow VV$ at LHC
- Anomalous quartic gauge couplings at EEF
- Phenomenology of $W^+W^- \rightarrow VV$
- Experimental status
- Prospects for LHC Run 2
- Monte Carlo generation

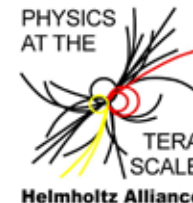
Organizing Committee

Matthias Bressler (TU Dresden)
Christoph Brümmer (GSI Helmholtz Center for Heavy Ion Research)
Barbara Jäger (TU Dresden)
Michael Kobel (TU Dresden)
Svenja Lohmeyer (TU Dresden)
Tobias Marquardt (TU Dresden)
Klaus M. Peters (TU Dresden)
Tobias Ruster (TU Dresden)
Tobias Schaefer (TU Dresden)
Andreas Schuler (TU Dresden)

Registration deadline
12 September 2013

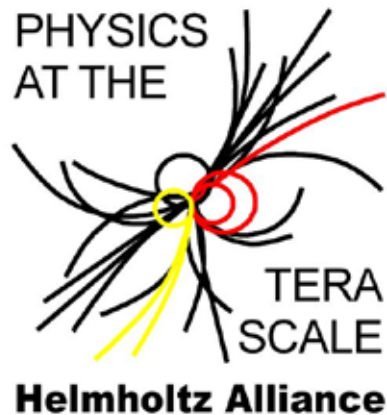
Contact: workshop@terascale.de
and more information visit the online
to register please go to:

<http://www.terascale.de/aqgc2013>



Thanks to

Funding body:



Organizing support:

Thomas Schörner-Sadenius (DESY)

Organizing Committee:

Theory:

Christophe Grojean (ICREA/IFAE & CERN)

Barbara Jäger (U Mainz)

Jürgen Reuter (DESY)

CMS:

Matthew Herndon (U Wisconsin)

Yurii Maravin (Kansas State U)

Kalanand Mishra (FNAL)

ATLAS:

Michael Kobel (TU Dresden)

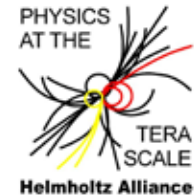
Sabine Lammers (Indiana U and TU Dresden)

Anja Vest (TU Dresden)

HGF Alliance „PHYSICS AT THE TERASCALE“

Main Alliance period: 2008-2012

Continuing pillars: 2013-2015



The Strategic Helmholtz Alliance 'Physics at the Terascale' is a structured research network comprising 17 universities, 2 Helmholtz institutes and 1 Max Planck Institute. The Alliance acts as a tool for a more effective collaboration, in particular between experimentalists and theorists.

Website: www.terascale.de

This workshop is supported by the „Alliance Forum“*:

- Education (schools, workshops, training, seminars)
- Working Groups (MC, statistics, pdf)
- Member support
- Networking

* previously known as “Analysis Centre”


Aim of the workshop

- intensive discussions between experimentalists and theorists on
 - tri-boson Production
 - vector boson scattering
 - diffractive („exclusive“) VV production
- theory e.g.:
 - status of understanding the SM processes
 - BSM aQGCs: effective field theories vs. VV resonances
 - issues of unitarization
 - tools for the simulation
- experiment
 - issues in the measurements
 - extraction of quartic gauge couplings at the LHC from the 8 TeV data, and prospects for 13/14 TeV
 - questions / wishlist for theorists
- **Ample time allocated for discussions, please profit !**

Workshop Timetable I

Monday 30 September 2013

- 12:45 - 13:15 **Registration**
- 13:15 - 13:30 **Welcome**
- 13:15 **Introduction 15'**
Speaker: Michael Kobel (TU Dresden)
- 13:30 - 15:45 **Theory status of all relevant signal+background SM processes**
Convener: Juergen Reuter (DESY)
- 13:30 **SM VVjj production (VVjj-EW, VVjj-QCD, fully leptonic or semileptonic) 30'**
Speaker: Barbara Jaeger (Universitaet Mainz)
Material: [Slides](#) 
- 14:15 **SM and BSM gamma gamma --> VV 30'**
Speaker: Sandeepan Gupta (University of Michigan)
- 15:00 **SM VVV production at LHC 30'**
Speaker: Francisco Campanario (IFIC, Univ Valencia)
- 15:45 - 16:15 **Coffee break**
- 16:15 - 18:35 **Experimental status - plans - questions at 8 TeV**
Convener: Kalanand Mishra (Fermilab)
- 16:15 **VVjj (V=W,Z) final states at LHC 30'**
Speaker: Philipp Anger (IKTP, Technische Universität Dresden)
Material: [Slides](#) 
- 17:00 **gamma gamma --> WW at Tevatron 20'**
Speaker: Émilien Chapon (CEA-Saclay and École Polytechnique, Palaiseau)
- 17:30 **exclusive gamma gamma --> WW at LHC 20'**
Speaker: Finn Rebassoo (LLNL, USA)
- 18:00 **VVV (V=gam,W,Z) at LHC e.g. (W/Z)gamgam, WWgam, WWW, ... 30'**
Speaker: Veit Scharf (Kirchhoff Institut für Physik, Universität Heidelberg)
- 18:35 - 20:00 **Welcome Reception**
Drinks and Fingerfood

- 09:00 - 12:00 **theory overview:BSM physics**
Convener: Barbara Jaeger (Universitaet Mainz)
- 09:00 **Theory of anomalous couplings in EFT (TGC and QGC, and connections between both) 50'**
Speaker: Nicolas Greiner (MPI München)
- 10:10 **Partially strong VV scattering 35'**
Speaker: Christophe Grojean (CERN)
- 11:00 **Issues of unitarisation 40'**
Speaker: Marco Sekulla (Universität Siegen)
- 12:00 - 13:30 **Lunch break**
- 13:30 - 14:35 **Theory overview: BSM models**
Convener: Anja Vest (TU Dresden)
- 13:30 **Explicit BSM Models (e.g. w/ resonances) and their relation to parametrizations of aQGCs 45'**
Speaker: Wolfgang Kilian (University of Siegen)
- 14:35 - 15:50 **Short Contributions**
Convener: Anja Vest (TU Dresden)
- 14:35 **Weakly-coupled low-mass bound states in 3 vector boson final states 15'**
Speaker: Axel Maas (Uni Jena)
Material: [Slides](#) 
- 15:00 **aQGC from VWgamma at CMS 15'**
not yet confirmed
Speaker: James Faulkner (Tennessee Univ)
- 15:25 **Anomalous gauge couplings in W/Z exclusive pair production at the LHC with forward proton detectors 15'**
Speaker: Émilien Chapon (SPP/Irfu/CEA Saclay)
- 15:50 - 16:20 **Coffee break**
- 16:20 - 17:50 **Experimental studies for 13/14 TeV**
Convener: Sabine Lammers (Indiana University and TU Dresden)
- 16:20 **CMS: Studies for European Strategy and Snowmass 30'**
Speaker: Senka Duric (Univ. of Wisconsin)
- 17:05 **ATLAS: Studies for European Strategy and Snowmass 30'**
Speaker: Shu Li (Duke University)
- 19:00 - 23:59 **Workshop dinner**
Please see the [directions to the dinner](#) in restaurant Luisenhof.
Location: Bergbahnstraße 8, 01324 Dresden (www.luisenhof-dresden.de)

Workshop Timetable III

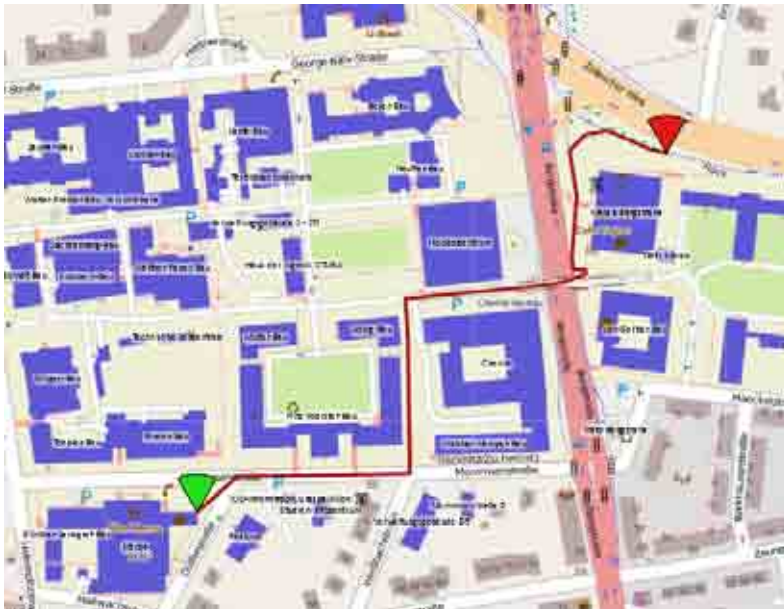
Wednesday 02 October 2013

- 09:00 - 11:00 **Monte Carlo generators**
- 09:00 **VBFNLO** 20'
Speaker: Michael Rauch (Karlsruhe Institute of Technology)
- 09:30 **Whizard** 20'
Speaker: Juergen Reuter (DESY)
- 10:00 **aMC@NLO/MADGRAPH** 20'
Speaker: Olivier Mattelaer (University of Illinois)
- 10:30 **SHERPA** 20'
Speaker: Marek Schönherr (University of Durham)
- 11:00 - 11:15 **Coffee break**
- 11:15 - 12:30 **Final discussion: and summary talk**
- 11:15 **Workshop Summary** 30'
Speaker: Tao Han (Univ. of Pittsburgh)

Workshop Dinner tomorrow: Restaurant Luisenhof, 19:00

Way to the dinner (more info tomorrow, see also Web):

- bus 61 from „Technische Univ“ (Fritz-Förster Platz) to „Körnerplatz“ depart at 18:00 or 18:10 (600 m walk from here, tickets needed)
- cable car (Standseilbahn) from Körnerplatz directly to the restaurant
- one-way cable car tickets (already paid for you) at the station (should be used in groups, there are no single tickets !)
- meet at the cable car station at 18.45 pm



Organizational hints

- WLAN
 - TU Dresden is equipped with eduroam
 - Guest VPN accounts available at reception
 - net: VPN/WEB (then open browser)
 - user: vbs**@gast (with ** = 01,02,03,...)
 - pass: aqgc2013
- Lunch tomorrow and Wednesday
 - Mensa next door
- Please don't hesitate to ask the Organizing Committee in case of questions!

Have a fruitful workshop !