

# **Advances in Computational Particle Physics**

**Monday 15 September 2014 - Friday 19 September 2014**

**Durbach, Germany  
Programme**

# Table of contents

Monday 15 September 2014	3
Welcome	3
Project A1	3
Tuesday 16 September 2014	4
Project A2	4
Project A5	4
DFG funding in Nuclear and Particle Physics	4
Low energy searches for new physics	4
Project B1	4
Project A4	4
Wednesday 17 September 2014	5
Project B3	5
Precision Calculations for Hadron Collider Observables	5
Project B5	5
Leptonic Light-by-Light Scattering Contributions to $g-2$	5
Thursday 18 September 2014	6
Project C3	6
Project B4	6
Threshold resummation for spartons and some new aspects of the eikonal approximation.	6
Project C1	6
Project C4	6
Friday 19 September 2014	7
Project C5	7
Project C6	7
Project B2	7
Farewell	7

# Monday 15 September 2014

## Welcome (15:15-15:30)

- Presenters: KÜHN, Johann

## Project A1 (15:30-17:30)

time	[id] title	presenter
15:30	[25] Massless Propagators, R(s) and Multiloop QCD	Dr. CHETYRKIN, Konstantin
16:20	[26] Tadpoles, the Rho Parameter and Quark Masses	KÜHN, Johann
17:00	[27] Electroweak Radiative Corrections at High Energies	PENIN, Alexander

## Tuesday 16 September 2014

### **Project A2 (09:00-09:45)**

time [id] title

presenter

09:00 [28] News form FORM4/TFORM

VERMASEREN, Jos

09:25 [29] ParFORM, FIRE, and FIESTA

UEDA, Takahiro

### **Project A5 (09:45-10:30)**

time [id] title

presenter

09:45 [46] New ideas on parton showers and their implementation

CZAKON, Michael

### **DFG funding in Nuclear and Particle Physics (11:00-11:30)**

- Presenters: ZACH, Karin

### **Low energy searches for new physics (11:30-12:30)**

- Presenters: CZARNECKI, Andrzej

### **Project B1 (15:00-16:30)**

time [id] title

presenter

15:00 [33] Massive Feynman integrals and electroweak corrections

Dr. RIEMANN, Tord

15:40 [34] New results on  $m_{\text{top}}$ ,  $\overline{MS}$  mass and differential cross sections

DOWLING, Matthew

16:00 [35] Next-to-next-to-leading order QCD techniques and predictions for the LHC

CZAKON, Michael

### **Project A4 (17:00-18:30)**

time [id] title

presenter

17:00 [65] Lattice QCD with twisted mass fermions

JANSEN, Karl

17:40 [66] Eta and Eta' Mixing and the Witten-Veneziano Formula

URBACH, Carsten

18:10 [67] Towards thermodynamics from lattice QCD with dynamical charm

BURGER, Florian

## Wednesday 17 September 2014

### **Project B3 (09:00-10:30)**

time	[id] title	presenter
09:00	[30] Precision Results on $\alpha_s$ , $m_c$ and the PDFs in Deep-Inelastic Scattering	Dr. BLUEMLEIN, Johannes
09:30	[31] Modern Summation Technologies applied to Quantum Field Theory	Dr. SCHNEIDER, Carsten
10:00	[32] Structure Function Results on the Lattice	ALEXANDROU, Constantina

### **Precision Calculations for Hadron Collider Observables (11:00-12:00)**

- Presenters: Prof. GEHRMANN, Thomas

### **Project B5 (15:00-18:00)**

time	[id] title	presenter
15:00	[54] Higgs boson production in gluon fusion	SPIRA, Michael
15:40	[62] Associate heavy quark Higgs production	KRÄMER, Michael
16:00	coffee break	
16:30	[55] Higgs fits	RAUCH, Michael
16:50	[56] BSM Higgs Properties	MÜHLLEITNER, Milada Margarete
17:15	[57] NLO QCD corrections for the LHC	ZEPPENFELD, Dieter

### **Leptonic Light-by-Light Scattering Contributions to $g-2$ (18:00-18:30)**

- Presenters: MARQUARD, Peter

# Thursday 18 September 2014

## **Project C3 (09:00-10:00)**

time	[id] title	presenter
09:00	[50] Dark matter relic density with Sommerfeld enhancement in the MSSM	BENEKE, Martin
09:20	[51] Top-pair production near threshold in e+e- collisions	Prof. STEINHAUSER, Matthias
09:40	[52] Threshold resummation of heavy (s)particles pair production at hadron colliders	PICLUM, Jan

## **Project B4 (10:00-10:30)**

time	[id] title	presenter
10:00	[47] Unstable particles with effective field theory	BENEKE, Martin

## **Threshold resummation for spartons and some new aspects of the eikonal approximation.**

**(11:00-12:00)**

- Presenters: LAENEN, Eric

## **Project C1 (15:00-16:45)**

time	[id] title	presenter
15:00	[59] Effective Theories for QCD with Heavy Quarks and lattice QCD	SOMMER, Rainer
15:55	[60] Soft-collinear factorization in B decays	BENEKE, Martin
16:20	[61] Non-leptonic B-decays at NNLO: Techniques and phenomenology	HUBER, Tobias

## **Project C4 (17:00-18:00)**

time	[id] title	presenter
17:00	[48] Top-quark physics at colliders	UWER, Peter

## Friday 19 September 2014

### **Project C5 (08:45-10:00)**

time	[id] title	presenter
08:45	[44] tba	MIHAILA, Luminita Nicoletta
09:10	[45] tba	Prof. STEINHAUSER, Matthias
09:35	[53] Rare B decays	MISIAK, Mikolaj

### **Project C6 (10:00-10:30)**

time	[id] title	presenter
10:00	[58] Flavoured supersymmetry and grand unification	NIERSTE, Ulrich

### **Project B2 (10:45-11:45)**

time	[id] title	presenter
10:45	[49] Non-perturbative computation of the strong coupling constant on the lattice	WOLFF, Ulli

### **Farewell (11:45-12:00)**

- Presenters: Prof. KRÄMER, Michael