

The Structure of Local Quantum Fields

Lectures (some titles are still tentative)

Louis F. Alday (IAS, Princeton) (2 Lectures):

Scattering amplitudes at strong coupling, minimal surfaces and integrability

Spencer Bloch (Chicago U.) (4 Lectures):

From Hodge Structures to One-loop Amplitudes

Johannes Bluemlein (DESY Theory, Zeuthen) (2 Lectures):

From finite Harmonic Sums and Iterated Integrals to Difference Equations in Higher Order Calculations in QFT

David Broadhurst (Open U.) (2 Lectures):

Lectures on MZVs and other periods in quantum field theory

Ruth Britto (CEA Saclay) (4 Lectures):

Recursive construction of amplitudes

Francis Brown (CNRS, Math., Jussieu) (4 Lectures):

Lectures on graph polynomials and Feynman integrals

Gregory Korchemsky (CEA, Saclay) (2 Lectures):

Lectures on symmetries and analytic properties of scattering amplitudes in N=4 SYM theory

Dirk Kreimer (IHES) (4 Lectures):

Hopf algebraic aspects of Quantum Fields

Mathias Staudacher (AEI, Potsdam) (2 or 4 Lectures):

Lectures on Ads/CFT and integrability of $N = 4$ SYM

Matt Szczesny (Boston U.) (2 Lectures):

Lectures on Feynman graphs and Ringel Hall algebras

Walter van Suijlekom (Radboud University Nijmegen) (4 Lectures):

The structure of perturbative quantum gauge theories

Karen Yeats (Simon Fraser U.) (4 Lectures):

Rearranging Dyson–Schwinger Equations I-III and spanning forest polynomials of Feynman graphs

Schedule: Lectures 09:00-10:30, 11:00-12:30, 15:00-16:30

Attention: Lectures start Tuesday, June 08 at 09:30. Monday is arrival day. Lectures end Friday, June 25 before lunch.

Program

Week 1, June 07-11 (13 Lectures, 90min. each)

Monday 14:00– Arrival
Tuesday 09:00-09:30 Welcome, 09:30-10:30 Kreimer I, 10:50-12:20 Bloch I, 16:00-18:00 Kreimer II
Wednesday 09:00-10:30 Broadhurst I, 10:50-12:20 Bloch II, 15:00-16:30 Broadhurst II, 17:00-18:30 Brown I
Thursday 09:00-10:30 Bluemlein I, 10:50-12:20 Brown II, 16:00-17:30 Bluemlein II
Friday 09:00-10:30 van Suijlekom I, 10:50-12:20 Britto I, 16:00-17:30 van Suijlekom II

Week 2, June 14-18 (13 Lectures, 90min. each)

Monday 09:00-10:30 Bloch III, 10:50-12:20 Britto II, 16:00-17:30 Kreimer III
Tuesday 09:00-10:30 van Suijlekom III, 10:50-12:20 Britto III, 16:00-17:30 van Suijlekom IV
Wednesday 09:00-10:30 Britto IV, 10:50-12:20 Brown III
Thursday 09:00-10:30 Korchemsky I, 10:50-12:20 Yeats I, 16:00-17:30 Korchemsky II
Friday 09:00-10:30 Yeats II, 10:50-12:20 Bloch IV

Week 3, June 21-25 (12 Lectures, 90min. each)

Monday 09:00-10:30 Brown IV, 10:50-12:20 Yeats III, 16:00-17:30 Staudacher I
Tuesday 09:00-10:30 Yeats IV, 10:50-12:20 Staudacher II
Wednesday 09:00-10:30 Szczesny I, 10:50-12:20 Alday I, 16:00-17:30 Szczesny II
Thursday 09:00-10:30 Alday II, 10:50-12:20 Kreimer IV
Friday 09:00-10:30 TBA, 10:50-12:20 TBA