

SAGEX Closing Meeting

Report of Contributions

Contribution ID: 63

Type: **not specified**

Talk 1: The (squared) amplituhedron and its boundary structure

Tuesday 21 June 2022 10:10 (40 minutes)

Presenter: HESLOP, Paul

Contribution ID: 64

Type: **not specified**

Talk 2: Hidden geometry in two-dimensional scattering

Tuesday 21 June 2022 11:30 (40 minutes)

Presenter: DOREY, Patrick (Durham University)

Contribution ID: 65

Type: **not specified**

Talk 3: Classical Gravitational Scattering from a Gauge-Invariant Double Copy

Tuesday 21 June 2022 12:10 (40 minutes)

Presenter: BRANDHUBER, Andreas (Queen Mary University of London)

Contribution ID: 66

Type: **not specified**

Talk 4: Computer Algebra and Special Function Algorithms for Feynman Integrals

Tuesday 21 June 2022 14:20 (40 minutes)

Presenter: SCHNEIDER, Carsten (Johannes Kepler University Linz)

Contribution ID: 67

Type: **not specified**

Talk 5: Graviton particle statistics and coherent states from classical scattering amplitudes

Tuesday 21 June 2022 15:00 (40 minutes)

Presenter: BRITTO, Ruth

Contribution ID: **68**

Type: **not specified**

Talk 6: Applications of Scattering Amplitudes to Gravitational Waves (via Zoom)

Tuesday 21 June 2022 16:15 (40 minutes)

Presenter: BERN, Zvi (University of California Los Angeles (US))

Contribution ID: 69

Type: **not specified**

Talk 7: Amplitude Singularities from Cluster Algebras and Tropical Geometry

Wednesday 22 June 2022 10:00 (40 minutes)

Presenter: PAPATHANASIOU, Georgios

Contribution ID: 70

Type: **not specified**

Talk 8: Waveforms from Amplitudes

Wednesday 22 June 2022 11:10 (40 minutes)

Presenter: KOSOWER, David (CEA-Saclay)

Contribution ID: 71

Type: **not specified**

Talk 9: The Integrable Hypereclectic Spin Chain

Wednesday 22 June 2022 11:50 (40 minutes)

Presenter: STAUDACHER, Matthias (Max-Planck-Institut fuer Gravitationsphysik)

Contribution ID: 72

Type: **not specified**

Talk 10: Higher order corrections in QCD and Gravity (via Zoom)

Wednesday 22 June 2022 14:00 (40 minutes)

Presenter: BLUEMLEIN, Johannes

Contribution ID: 73

Type: **not specified**

Talk 11

Contribution ID: 74

Type: **not specified**

Colloquium: Spacetime, Quantum Mechanics and Scattering Amplitudes

Wednesday 22 June 2022 16:15 (1h 45m)

Presenter: ARKANI-HAMED, Nima (IAS)

Contribution ID: 75

Type: **not specified**

SAGEX...and beyond

Friday 24 June 2022 10:20 (30 minutes)

Presenter: TRAVAGLINI, Gabriele

Contribution ID: 76

Type: **not specified**

SAGEX film screening, with Introduction by Ekaterina Eremenko

Thursday 23 June 2022 17:00 (1 hour)

Contribution ID: 77

Type: **not specified**

Talk 12: Explicit gravity amplitudes on self-dual backgrounds

Thursday 23 June 2022 10:00 (40 minutes)

We give formulae for all tree-level graviton scattering amplitudes in curved self-dual radiative space-times; these are chiral, source-free, asymptotically flat spaces determined by free characteristic data at null infinity. Such space-times admit an elegant description in terms of twistor theory, which manifests their underlying integrability. The tree-level S-matrix is written in terms of an integral over the moduli space of holomorphic maps from the Riemann sphere to twistor space, with the degree of the map corresponding to the helicity configuration of the external gravitons. For the MHV sector, the amplitude formula is derived directly from general relativity, while the others arise from ambitwistor-strings. The amplitudes exhibit novel features that are absent in Minkowski space, including back-scattering and tail effects. Our formulae have many fewer integrals than expected from space-time perturbation theory. In special cases, such as self-dual plane waves, the formulae become particularly explicit with few residual integrals. This is joint work with Tim Adamo and Atul Sharma, arxiv:2203.02238 and 2103.16984.

Presenter: MASON, Lionel

Contribution ID: 78

Type: **not specified**

Talk 13: Celestial Holography for Asymptotically Flat Geometries

Thursday 23 June 2022 11:20 (40 minutes)

Presenter: MCLOUGHLIN, Tristan

Contribution ID: 79

Type: **not specified**

Talk 14: Gravitational Dynamics from Scattering Amplitudes

Thursday 23 June 2022 12:00 (40 minutes)

Presenter: BJERRUM-BOHR, Emil

Contribution ID: **80**

Type: **not specified**

Talk 15: Classical gravitational scattering from a worldline quantum field theory

Thursday 23 June 2022 14:10 (40 minutes)

Presenter: PLEFKA, Jan

Contribution ID: **81**

Type: **not specified**

Talk 16: From conformal symmetries and integrability to the Electron-Ion Collider

Thursday 23 June 2022 14:50 (40 minutes)

Presenter: MOCH, Sven Olaf

Contribution ID: **82**

Type: **not specified**

Industry Partner talks

Friday 24 June 2022 09:30 (50 minutes)

Contribution ID: **83**

Type: **not specified**

Supervisory Board Meeting

Friday 24 June 2022 11:10 (1h 30m)

Contribution ID: **84**

Type: **not specified**

Talk 11: Novel bootstraps leveraging the duality between color and kinematics (via Zoom)

Wednesday 22 June 2022 14:40 (40 minutes)

Presenter: CARRASCO, John Joseph

Contribution ID: 85

Type: **not specified**

Talk 17: An Antipodal Duality Between Amplitudes and Form Factors (via Zoom)

Thursday 23 June 2022 16:10 (40 minutes)

Presenter: DIXON, Lance

Contribution ID: **86**

Type: **not specified**

Welcome from Head of School (via zoom)

Tuesday 21 June 2022 10:00 (10 minutes)

Presenter: HOBSON, Peter (QMUL)

Contribution ID: 87

Type: **not specified**

Susanne Milde & Sascha Rieger (Milde Marketing)

Friday 24 June 2022 10:10 (10 minutes)

Contribution ID: **88**

Type: **not specified**

Bertram Sabrowsky-Hirsch (RISC Software GmbH)

Friday 24 June 2022 09:30 (10 minutes)

Contribution ID: **89**

Type: **not specified**

Devendra Kapadia (Wolfram)

Friday 24 June 2022 09:40 (10 minutes)

Contribution ID: **90**

Type: **not specified**

Jürgen Gerhard (Maplesoft)

Friday 24 June 2022 09:50 (10 minutes)

Contribution ID: **91**

Type: **not specified**

Nicolas Meric (DreamQuark)

Friday 24 June 2022 10:00 (10 minutes)

Contribution ID: 92

Type: **not specified**

SAGEX Network group photograph

Wednesday 22 June 2022 12:30 (15 minutes)