

Workshop Schedule

Events for:
Monday, April 8th - Friday, April 12th

Monday, April 8th

9:30am **Alexander Zamolodchikov - SCGP 102**

Speaker: Alexander Zamolodchikov

Title:

11:00am **Coffee - Cafe**

11:30am **Monica Guica**

Speaker: M. Guica

Title: The JTbar deformation of two-dimensional CFTs".

12:30pm **Lunch - Cafe**

1:30pm **Edgar Shaghoulian - SCGP 102**

Speaker: E. Shaghoulian

Title: TTbar and quantum mechanics

2:30pm **Jorrit Kruthoff - SCGP 102**

Speaker: J. Kruthoff

Title: Highlights of TTbar in higher dimensions

3:00pm **Cookies & Tea - Cafe**

4:00pm **Akikazu Hashimoto - SCGP 102**

Speaker: A. Hashimoto

Title: C-functions for TT-bar deformation

4:30pm **Leonardo Rastelli - SCGP 102**

Title:

Abstract:

Tuesday, April 9th

9:30am **Herman Verlinde - SCGP 102**

Speaker: H. Verlinde

Title:

10:30am **Coffee - Cafe**

11:00am **Andrea Cavaglia - SCGP 102**

Speaker: A. Cavaglia

Title: From CDD Factors to TTbar via Integrability

11:30am **Riccardo Conti**

Speaker: R. Conti

Title: Local Integrals of Motion and irrelevant perturbations of 2D Integrable Field Theories

Abstract: I will describe a method, based on a field-dependent change of space-time coordinates, to construct the set of TTbar-deformed local Integrals of Motion of a generic 2D Integrable Field Theory. I will also show how this technique can be used to identify the perturbing operator associated to a whole class of non-Lorentz invariant deformations which correspond to more complicated changes of variables.

12:00pm **Lunch - Cafe**

1:00pm **SCGP Weekly Talk: Roberto Tateo - 102**

Speaker: Roberto Tateo

Title: Conserved currents and non-Lorentz invariant effective field theories

Abstract: Two-dimensional quantum field theories deformed by Zamolodchikov's $\overline{TT}$ operator have recently attracted the attention of theoretical physicists due to the many important links with string theory and AdS/CFT. The introduction of this perturbation induces coupling between the stress-energy tensor and spacetime and the resulting models can be interpreted as the undeformed theories coupled to topological Jackiw–Teitelboim gravity. In this talk, I will argue that there exist infinite families of generalised gravity-type models corresponding to specific irrelevant deformations of integrable quantum field theories. In these models, the geometry couples instead to generic combinations of the local conserved currents, labelled by the Lorentz spin. These natural generalisations of the $\overline{TT}$ perturbation are, in spirit, similar to the $\overline{JT}$ model as the associated scattering phase factors explicitly break Lorentz symmetry.

2:30pm **Vir Bulchandani - SCGP 102**

Speaker: V. Bulchandani

Title: Marginal current-current deformations of 2D CFTs

3:00pm **Cookies & Tea - Cafe**

4:00pm **Gandalf Lechner - SCGP 102**

Speaker: G. Lechner

Title: Deformations of QFTs and construction of models

Abstract: In this talk I will review a program for deforming quantum field theories with the aim to produce non-trivial models in a non-perturbative manner. Starting from a given (local, Poincaré-covariant) QFT on Minkowski space, our deformation produces a family of new field operators that satisfy modified localization and covariance properties. In typical examples, these fields are characterized by a generalization of the exchange relations of the Zamolodchikov-Faddeev algebra which is given a spacetime interpretation in this process. I will explain how the deformation gives rise to integrable models in 1+1 dimensions, and new models in $d > 1+1$ dimensions in which the fields are only localizable in Rindler wedges. A particular example produces exactly the same deformation of the 2-body S-matrix as the $\overline{TT}$ deformation. This offers two different perspectives on such models, one from S-matrix bootstrap and one from QFT on non-commutative Minkowski space.

Wednesday, April 10th

9:30am **Sav Sethi - SCGP 102**

Speaker: S. Sethi

Title: TTbar and Supersymmetry

10:30am **Coffee - Cafe**

11:00am **Shouvik Datta - SCGP 102**

Speaker: S. Datta

Title: TTbar deformed partition functions

Abstract: We shall discuss the initial investigations which show that the partition function of the TTbar deformed CFTs are modular invariant. The deformed free boson theory will be considered as an example. Finally, we shall see that the spectrum contains a protected sub-sector which renders the elliptic genus invariant under this deformation.

12:00pm **Lunch - Cafe**

1:30pm **Bruno Le Floch - SCGP 102**

Speaker: B. Le Floch

Title: Solving TTbar+JTbar using background gauge fields

Abstract: The TTbar deformation is part of a family of deformations labeled by pairs of conserved currents. So far, energy levels of deformations of CFTs were determined in two cases: TTbar for a relativistic theory, and JTbar for a holomorphic current. I explain how background gauge fields let us solve for energy levels under arbitrary linear combinations of these deformations. Exploring the parameter space, we find qualitatively similar UV behaviour than in TTbar-deformed theories in general and find that the deformations mostly commute. Our exact explicit solution for arbitrary deformations matches holographic calculations. There are roadblocks to applying this formalism to higher-spin KdV charges. Using different tools we derived the evolution of KdV charges in a TTbar-deformed CFT.

2:30pm **Cookies & Tea - Cafe**

3:30pm **Pawel Caputa - SCGP 102**

Speaker: P. Caputa

Title: Sphere partition functions and cut-off AdS

4:00pm **Vasudev Shyam - SCGP 102**

Speaker: V. Shyam

Title: The local Callan Symanzik equation in TT deformed theories

Thursday, April 11th

9:30am **John Cardy - SCGP 102**

Speaker: J. Cardy

Title: TTbar Deformed Correlation Functions

10:30am **Coffee - Cafe**

11:00am **David Kutasov - SCGP 102**

Speaker: D. Kutasov

Title: Field and String Theory Perspectives on TTbar and related theories.

12:00pm **Soumangsu B. Chakraborty**

Speaker: Soumangsu B. Chakraborty

Title: $T\bar{T} + J\bar{T} + T\bar{J}$ deformed $\mathcal{N}=2$ SCFT from string theory

12:30pm **Lunch - Cafe**

1:30pm **Wei Song - SCGP 102**

Speaker: W. Song

Title: Warping AdS with JTbar deformations: a toy model for Kerr/CFT

2:00pm **Alessandro Sfondrini**

Speaker: A. Sfondrini

Title: AdS3 strings in light-cone gauge from T-Tbar

2:30pm **Gaston Giribet**

Speaker: G. Giribet

Title: Ultraviolet deformations and AdS3/CFT2

3:00pm **Cookies & Tea - Cafe**

4:00pm **Victor Gorbenko - SCGP 102**

Speaker: V. Gorbenko

Title: TTbar as Simple Gravity

5:00pm **Panel - SCGP 102**

Friday, April 12th

9:30am **Sergei Dubovsky - SCGP 102**

Speaker: S. Dubovsky

Title: Beyond TTbar

10:30am **Coffee - Cafe**

11:00am **Eva Silverstein - SCGP 102**

Speaker: E. Silverstein

Title: T T-bar and relevant deformations for dS holography

12:00pm **Lunch - Cafe**

3:00pm **Cookies & Tea - Cafe**

