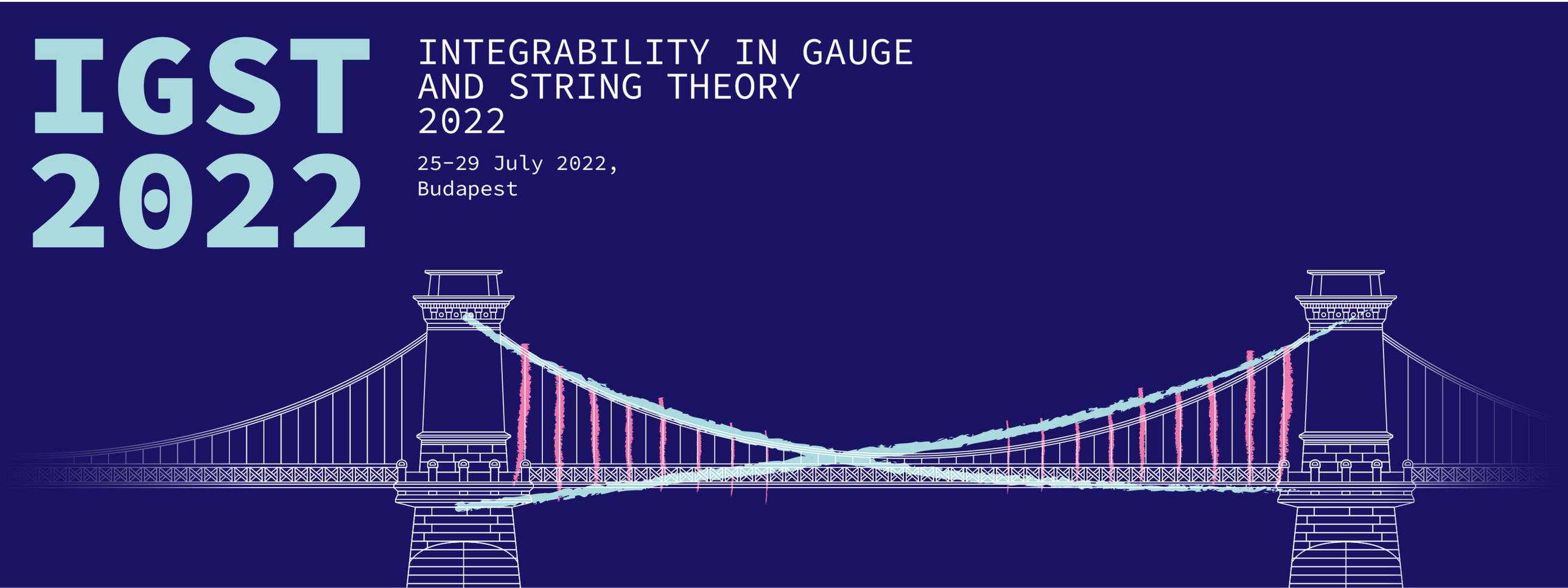
Summary and closing remarks



AdS/CFT integrability is 20 years old !

Strings in flat space and pp waves from N=4 superYang-Mills
David Eliecer Berenstein, Juan Martin Maldacena, Horatiu Stefan Nastase (Princeton, Inst. Advanced Study) (Feb, 2002)
hep-th/0202021 1,907 citations

The Bethe ansatz for N=4 superYang-Mills
J.A. Minahan, K. Zarembo (Uppsala U., Inst. Theor. Phys.) (Dec, 2002)
hep-th/0212208 1,367 citations

the founding fathers (and the chain of authority)

Chain Bridge: from beauty to the truth

Chain Bridge: work in progress

N=4 SYM as the mother theory

with its little sisters and daughters: ABJM, the AdS3 dual, N=2 SCFT, fishnet theories

- Amplitudes, form factors, correlation functions
- Defects and crosscaps
- Spectrum of AdS3/CFT2 & segmented strings
- Deformations and integrability

- General aspects of integrability
- Applications of integrability to condensed matter
- CFT and integrability
- Bootstrap
- Resurgence

- **Amplitudes, form factors, correlation functions**

- amplitudes in fishnet theories, Yangian geometry, Picard-Fuchs equations, Calabi-Yau manifolds **[F. Loebbert]**
- amplituhedron, positive/negative geometric interpretation, double loop expansion, ladder resummation **[J. Trnka]**
- Virasoro-Shapiro string amplitudes in AdS **[F. Alday]**
- bootstrap for the form factors and results to 8 loops; duality between the 3 point form factor and 6-gluon amplitudes **[M. Wilhelm]**
- new conjecture for the three point function in terms of QSC data **[B. Basso]**
- higher point correlators, multiple OPE expansions, light-like limit, Toda equation, stampedes **[E. Olivucci]**
- correlation functions of determinant operators in fishnet theories **[E. Vescovi]**

- **Defects and crosscaps**

- D-branes and 1-point functions in ABJM theory, MPS states, overlaps and transformation formulas for Gaudin super-determinants **[K. Zarembo]**
- N=4 SYM on RP4, crosscaps and overlaps, long range entanglement **[S. Komatsu]**

- **Spectrum of AdS3/CFT2 & strings in AdS3**

- mirror TBA for AdS/CFT, with corrected proposal for the dressing phase; interaction between massless and massive modes **[A. Sfondrini]**
- QSC proposal for AdS3/CFT2: massless modes and infinite order branch cuts **[A. Cavaglia]**
- discretised string in AdS3; computation of the spectral curve of the string **[D. Vegh]**

- **Deformations and integrability**

- Fishnets and eclectic spins chains; non-diagonalisable Hamiltonian, Jordan blocks and Polya enumeration theorem **[C. Ahn]**
- N=2 SCFT and dynamical spin models of elliptic type (maybe integrable) **[E. Pomoni]**

- **General aspects of integrability**

- Construction of the Bethe vectors for su(n) models and Hubbard model via Drinfeld currents **[A.Liashyk]**
- Monodromy matrix for long range spin chains and wrapping corrections: toy model for the Lüscher corrections **[T. Gombor]**
- Generalisation and classification of integrable models; new elliptic deformations of AdS2 and AdS3 spin chains **[A.L. Retore]**
- Geometry of Bethe equations, analytical structure of Q functions for general finite dimensional algebras **[D. Volin]**
- Irrelevant deformations of CFTs, study of the space of integrable theories via (numerical) analysis of TBA equations **[L. Cordova]**
- Topological theories and integrability: BF theory and the affine Gaudin models **[B. Vicedo]**

- **Applications of integrability to condensed matter**

- Ballistic macroscopic fluctuation theory to describe long-range correlations for transport in integrable systems **[T. Yoshimura]**

- **CFT and integrability**

- N-point correlation functions in generic CFTs, partial wave decomposition, relation to Gaudin models and hyperbolic Calogero-Sutherland models **[I. Buric]**

- **Bootstrap**

- matrix model bootstrap as an alternative to Monte-Carlo method to compute Wilson loops in lattice Yang-Mills theory **[Z. Zheng]**

- **Resurgence**

- integrable models like O(n) model and Lieb-Linieger as testing ground for the study of renormalons in QFts; weak resurgence conjecture **[M. Marino]**

IGST 23 in ETH Zürich, 19-23 June

will feature virtual and hybrid elements next to being a traditional conference

organizers: N. Beisert, J. Broedel, S. Driezen, S. Lacroix