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- Main research interest
  - ⇝ Correlation functions of interacting quantum integrable models

Research outline

- Interacting models solvable by the Bethe Ansatz or the quantum separation of variables
- Correlation functions ($\boldsymbol{c} = 0$) at the free fermion point
  - $\det_{L^2(\Gamma)}\big[\mathrm{id} + \mathrm{V}_{x,t,T}\big]$ $\rightsquigarrow$ Asymptotics by Riemann–Hilbert problems
  - $\int_{C^N} \prod_{a<b}^{N} |\lambda_a - \lambda_b|^2 \cdot \prod_{a=1}^{N} \mathrm{e}^{-NV(\lambda_a)}$ $\rightsquigarrow$ Asymptotics by RHP/concentration of measure
- Correlation functions ($\boldsymbol{c} \neq 0$) in the trully interacting case
  - $\sum_{n\geq 0} \int_{\Gamma^n} \mathcal{F}_n\big(\lambda_1, \ldots, \lambda_n \mid x, t, T\big)$
  - $\int_{C^N} \prod_{a<b}^{N} \Big\{ \sinh[\pi\omega_1(\lambda_a - \lambda_b)] \cdot \sinh[\pi\omega_2(\lambda_a - \lambda_b)] \Big\} \cdot \prod_{a=1}^{N} \mathrm{e}^{-V_N(\lambda_a)}$

Subjects of investigation

- Device tools to compute the correlators ;
- Proof of convergence/well-definiteness of the series ;
- Extraction of the large x, t asymptotics from the series
- Analysis of the large-N asymtptoics of MI