Workshop
"Analysis in TCS: testing, learning, and complexity"

November 4 - 8, 2024

organized by
**Sergey Bobkov, Polona Durcik, Alexandros Eskenazis, Irina Holmes Fay,
Paata Ivanisvili, Dor Minzer, Joseph Slote, and Alexander Volberg**

Time measurement: CET

- **Monday, November 4**

08:30 - 09:00	*Arrival and Self-Registration*
09:00 - 09:05	*Welcome by Stefan Hartmann*
09:05 - 09:15	*Opening Remarks*
09:15 - 10:25	**Shivam Nadimpalli** *High-dimensional convexity: testing, learning, and complexity*
10:25 - 11:00	*Coffee break*
11:00 - 12:10	**Hamed Hatami** *Sparse graph counting and Kelley–Meka bounds for binary systems*
12:10 - 13:40	*Lunch break*
13:40 - 14:50	**Avichai Marmour** (remote) *Permutation mixing via hypercontractivity of symmetric characters*
14:50 - 16:00	**Ohad Sheinfeld** *Improved Covering Results and Intersection Theorems in Symmetric Groups, via Hypercontractivity*
16:00 - 16:30	*Coffee break*
16:30 - 17:40	**Ohad Klein** *Slicing all edges of an n-cube requires $n^{2/3}$ hyperplanes*
from 17:40 on	*Get-Together*

- **Tuesday, November 5**

09:00 - 09:45	**Srinivasan Arunachalam** *Testing and learning phase states and their variants (Part 1)*
9:45 - 10:00	*Brief break*
10:00 - 10:45	**Srinivasan Arunachalam** *Testing and learning phase states and their variants (Part 2)*
10:45 - 11:15	*Coffee break*
11:15 - 12:25	**Tom Gur** (remote talk) *Higher-order Fourier analysis in quantum complexity theory*
12:25 - 14:30	*Lunch break*
14:30 - 16:00	**Open problems 1**
16:00 - 16:30	*Coffee break*
16:30 - 17:30	**Open problems 2**

- **Wednesday, November 6**

09:00 - 09:45	**Francisco Escudero Gutiérrez** *An approach towards the Aaronson–Ambainis conjecture via Fourier completely bounded polynomials (Part 1)*
9:45 - 10:00	*Brief break*
10:00 - 10:45	**Francisco Escudero Gutiérrez** *An approach towards the Aaronson–Ambainis conjecture via Fourier completely bounded polynomials (Part 2)*
10:45 - 11:15	*Coffee break*
11:15 - 12:25	**Kewen Wu** *Quantum State Preparation with Optimal T-Count*
12:25 - 14:30	*Lunch break*
14:30 - 16:00	**Collaboration time**
16:00 - 16:30	*Coffee break*
16:30 - 18:00	**Collaboration time**

- **Thursday, November 7**

09:00 - 10:10	**Dmitry Krachun** *An optimal space lower bound for approximating MAX-CUT*
10:10 - 10:50	*Coffee break*
10:50 - 12:00	**Pooya Hatami** *Constant-Cost Communication*
12:00 - 14:00	*Lunch break*
14:00 - 16:00	**Collaboration time**
16:00 - 16:30	*Coffee break*
16:30 - 18:00	**Collaboration time**

- **Friday, November 8**

09:00 - 10:10	**Dan Mikulincer** (remote) *Spectral gaps for measures on the cube via a generalized stochastic localization process*
10:10 - 10:50	*Coffee break*
10:50 - 12:00	**Joris Roos** *Sharp isoperimetric inequalities on the Hamming cube*
12:00 - 14:00	*Lunch break*
14:00 - 17:30	*Outing or collaboration time*