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Testing stabilizer states and Clifford unitaries

Date: Monday, May 11, 2026

Time: 12:00 – 13:00

Location: Building E2 6, Room E.11

The question of stabilizer testing, i.e. given copies of an unknown state, deciding whether it is (close to) a stabilizer state or far (enough) away, has received a fair amount of attention recently. In this talk I'll give an overview of the progress that has been made and highlight connections to additive combinatorics and the representation theory of the Clifford group. I'll also discuss the closely related problem of Clifford testing. The underlying material is necessarily somewhat technical, but I'll try to keep it as light as possible.

	Multi-copy	Single-copy	
		Auxiliary-free	Auxiliary-assisted
Clifford testing	$t = 4$	$\Omega(n^1 / 4) \leq t \leq O(n)$	Open
Stabilizer testing	$t = 6$ [GNW21]	$\Omega(n^1 / 2) \leq t \leq O(n)$ [HH25]	

Source: arXiv:25.10.07 164v1

