

國立中央大學數學系

專題演講

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演講題目：EMBEDDING THE n -QUBIT PROJECTIVE
CLIFFORD GROUP INTO A SYMMETRIC
GROUP

演講時間：2025年02月20日(星期四) 2:00 p.m. ~ 3:00 p.m.

演講地點：中央大學鴻經館M107

Abstract：

The n -qubit Clifford group, Cliff_n , and the n -qubit projective Clifford group, $\mathcal{C}_n$, play pivotal roles in quantum computing, especially in quantum error correction and quantum algorithms. However, methods for directly constructing these groups, even for small values of n , are rarely found in the literature.

In this talk, we use the normal form of Clifford gates to determine the centralizer of the generators of $\mathcal{C}_n$. Based on these results, we propose an embedding of $\mathcal{C}_n$ into $\text{Sym}_{2(4^n-1)}$. Furthermore, we show that the centralizer of the z -gate within $\mathcal{C}_n$ is isomorphic to the inertia subgroup of $\mathcal{C}_n$.

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