

COLÓQUIOS DA

**PÓS-GRADUAÇÃO
2025**

**Explicit Pfaffian Formula for
Amplitudes of Fermionic Gaussian
Pure States in
Arbitrary Pauli Bases**

**Miradel Seifi
IF - UFF**

Computing amplitudes of fermionic Gaussian pure states in arbitrary Pauli bases is a key challenge in quantum many-body physics. These amplitudes are essential for studying formation probabilities, entanglement, and entropy in non-standard bases. They also play a central role in optimizing log-likelihood functions in quantum tomography. In this work, we derive an explicit Pfaffian formula for determining these amplitudes in arbitrary Pauli bases using a matrix that encodes qubit parity. A recursive relation is also introduced to handle systems with different qubit numbers. Together, these tools enable efficient and scalable amplitude calculations.



**28
MAI**

**17H
SALA 201
(TORRE VELHA)
IF - UFF**