

IMPOSSIBILITY RESULT

In Anonymous Rings

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PROOF OF IMPOSSIBILITY RESULT

- Anonymous leader election system is the one where processors do not have unique identifiers.
- Symmetry between the processors is maintained and all processors start in the same state.
- Since they execute the same state machine, they send the same messages in each round.
- Thus they receive the same messages in each round and the state change for all of them is identical
- Hence, if one of the processors is elected as a leader, then so are all of them.
- Hence it is impossible to have an algorithm that elects a single leader.

