

[Barvínek, Jáchym; Hamhalter, Jan](#)

**Linear algebraic proof of Wigner theorem and its consequences.** (English) Zbl 1424.81005  
[Math. Slovaca](#) 67, No. 2, 371-386 (2017).

The authors present one another proof of the non-bijective version of Wigner's famous theorem on the structure of quantum mechanical symmetry transformations. Basically, they apply only elementary linear algebra. The key point is to show that any non-zero Jordan \*-homomorphism between matrix algebras preserving rank-one projections is implemented by either a unitary or an antiunitary operator. An application concerning certain preservers of quantum relative entropy on infinite quantum systems is also presented.

Reviewer: [Lajos Molnár \(Szeged\)](#)

**MSC:**

[81P45](#) Quantum information, communication, networks (quantum-theoretic aspects) Cited in 2 Documents

[15A86](#) Linear preserver problems

**Keywords:**

[Jordan homomorphisms](#); [Wigner theorem](#); [relative quantum entropy](#)

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