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**Description operator  $C$ -symmetry in the case of the space  $\mathbb{C}^2$ .** (Ukrainian. English summary)

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Summary: We describe all operators  $C$  in two-dimensional Hilbert space  $\mathbb{C}^2$  using Pauli matrices. The conditions for  $J_{\bar{\alpha}}$ -adjoint operator are presented, which guarantee it the property of  $C$ -symmetry.

**MSC:**

47A55 Perturbation theory of linear operators

47A57 Linear operator methods in interpolation, moment and extension problems

47B25 Linear symmetric and selfadjoint operators (unbounded)

**Keywords:**

Krein space; indefinite metrics;  $C$ -symmetry; Pauli matrix