Wang, Hua; Han, Yeqing
Drazin invertibility of anti-triangular operator matrix and its application. (Chinese. English summary) Zbl 07404479

Summary: In this paper, based on the space decomposition and solvability of operator equations, we discuss the Drazin invertibility of the anti-triangular operator matrix $M_I = \begin{bmatrix} A & B \\ I & 0 \end{bmatrix}$ under the conditions (1) $B^2A = BAB, A^2B = ABA$ and (2) $B = BA$, respectively. As applications, the Drazin invertibility of $MC = \begin{bmatrix} A & B \\ C & 0 \end{bmatrix}$ and $P + Q$ are obtained.

MSC:
15A09 Theory of matrix inversion and generalized inverses
15A29 Inverse problems in linear algebra

Keywords:
Drazin inverse; operator equation; space decomposition