

## **An inversion-free method for finding positive definite solution of a rational matrix equation**

### **Abstract**

A new iterative scheme has been constructed for finding minimal solution of a rational matrix equation of the form  $X + A * X^{-1} A = I$ . The new method is inversion-free per computing step. The convergence of the method has been studied and tested via numerical experiments.

**Keyword:** Rational matrix equation; Inversion-free