

# **A boundary value problem with conditions on the entire boundary of a noncharacteristic domain for a fourth-order equation**

Utkina E.

*Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia*

---

## **Abstract**

A boundary value problem with conditions on the entire boundary of a noncharacteristic domain for a fourth-order equation is studied. A method for obtaining conditions which ensure the unique solvability of this problem is proposed. This method reduces the problem to Fredholm equations, whose unique solvability is ensured by a uniqueness theorem proved by the method. To prove the uniqueness of a solution to problem, it is verified that under homogeneous conditions, the homogeneous equation has only the zero solution. The function, which is not identically zero on the domain, is a solution to the problem.

<http://dx.doi.org/10.1134/S1064562411030434>

---