

**Название публикации:**

On existence of vanishing at infinity solutions to second-order linear differential equations with low-degree polynomial coefficients

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**Наименование журнала:**

WSEAS Transactions on Systems and Control  
Volume 13, 2018, Pages 409-419

**Аннотация:**

We study a second order linear differential equation with low-degree polynomial coefficients arising while studying the Bellman equation for the investment portfolio control problem. Our purpose is to determine whether there exists a non-trivial solution vanishing at infinity. We prove an existence criterion for such solutions according to the signs of the coefficients. By the way, the same methods produce an existence criterion for non-trivial bounded solutions. Instead of a verbose formulation, a united criterion is presented in a table form admitting simple computer realization. © 2018, World Scientific and Engineering Academy and Society. All rights reserved.

**Ключевые слова:**

Investment portfolio control problem, Linear differential equations, Polynomial coefficients, Solutions vanishing at infinity