



Einladung zum Oberseminar

Dynamische Systeme und Kontrolltheorie

Julius-Maximilians-Universität Würzburg
Lehrstuhl für Mathematik II

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Solution Area for a Class of Linear Differential Equations with Hukuhara Derivative

We will provide a definition and basic information about the Hukuhara derivative and differential equations with the Hukuhara derivative. A brief review of some results on the development of the direct Lyapunov method for these equations we will give.

A formula for the solution area for a class of linear differential equations with Hukuhara derivative we will discuss. We will consider the Cauchy problem for the differential equation

$$D_H X(t) = AX(t), \quad X(0) = X_0 \quad (1)$$

where D_H is the Hukuhara derivative operator, $X(t) \in \text{conv } \mathbb{R}^2$, $t \in [0, T]$, T is a positive number, and $A \in L(\mathbb{R}^2)$ is a linear operator extended to the space $\text{conv } \mathbb{R}^2$ in a natural way:

$$AX = \{Ax, x \in X\} \subset \text{conv } \mathbb{R}^2$$

The main idea of the research is to construct a countable comparison system and its solution in explicit form.

An explicit formula is obtained for the area $S[X(t)]$ of solutions $X(t)$ of the Cauchy problem (1) under the assumption that $|\det A| = 1$ and $\text{tr } A < 2$.

Ort: Raum 01.003, Gebäude Mathematik Ost

Zeit: Freitag, 05.07.2019, um 10:15 Uhr

Zu diesem Vortrag laden wir Sie herzlich ein.

gez. Sergey Dashkovskiy