Function Spaces XI
July 6-10, 2015, Zielona Góra, Poland

Uniformly bounded composition operators in the Banach space of absolutely continuos functions

Dorota Głazowska

Faculty of Mathematics, Computer Science and Econometrics
University of Zielona Góra

Let $I, J \subset \mathbb{R}$ be intervals and let $h : I \times J \to \mathbb{R}$ be an arbitrary function. The main result says that if the Nemytskij composition operator H of the generator h mapping the set $AC(I, J)$ into the Banach space $AC(I, \mathbb{R})$ is uniformly bounded (or equidistantly uniformly bounded), then

$$h(x, y) = a(x)y + b(x), \qquad x \in I,\ y \in \mathbb{R},$$

for some functions $a, b \in AC(I, \mathbb{R})$.

The talk is based on a joint paper with Janusz Matkowski (Zielona Góra, Poland), Nelson Merentes and José Luis Sánchez (Caracas, Venezuela).