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Ordinary differential equations in Banach spaces: Peano theorem and omega limit sets.

The contribution consists of two parts. First, the generalization of the Peano theorem to ordinary differential equations in Banach spaces will be discussed.

In particular, a strong counterexample will be described. (This is a joint research with M. Johanis). The second part (based on the joint results with P. Vivi) delas with omega limit sets of of solutions of ordinary differential equations in Banach spaces. In particular, classification of the limit sets will be itroduced and main ideas of their construction will be indicated.