

Ordinary differential operators with distributions in coefficients

Volodymyr Mikhailets

Institute of Mathematics of the Czech Academy of Sciences

Institute of Mathematics of the National Academy of Sciences of Ukraine

The talk contains some new results on the self-adjointness and spectral properties of semi-bounded Sturm–Liouville operators on the line with strongly singular coefficients. The case of 1D-Schrödinger and Hill operators are studied in more detail.

Some classes of linear ordinary differential operators with strongly singular coefficients are studied in the talk. These operators are introduced as quasi-differential according to Shin-Zettl. Their domains may not contain non-zero smooth functions.

The talk is based on joint results with A. Murach, A. Goriunov, and V. Molyboga (Institute of Mathematics of NAS of Ukraine, Kyiv, Ukraine).