Sylvester equations without a unique solution and their applications

Bogdan Djordjevic

In this talk we will discuss matrix and operator equations of the form $AX - XB = C$, where we assume that the spectra of A and B intersect. This way we get Sylvester equations which are not regular, i.e. which are without a unique solution. We distinguish the cases where A and B are matrices, bounded linear operators on Banach spaces and closed linear operators on Banach or Hilbert spaces. We mention several applications which favor the irregularity of the initial equation.

Mathematical Institute of the Serbian Academy of Sciences and Arts, Serbia

E-mail: bogdan.djordjevic93@gmail.com