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CENTRO DE I&D EM MATEMÁTICA E APLICAÇÕES
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SEMINAR

Grupo de Análise Funcional e Aplicações
Functional Analysis and Applications Group

Exploring the function factorization concept through symbolic computation

Ana Conceição

Universidade do Algarve

Abstract

In recent years, computer algebra systems (CAS) have been made available to the general public. These applications have extensive capabilities of symbolic computation and allow computers to perform all, or a significant part, of the symbolic and numeric calculations present in many mathematical algorithms. In our work, we design and develop operator theory algorithms and implement them using the symbolic computation capabilities of the Wolfram Mathematica computer algebra system. By implementing these algorithms on a computer, new tools are created that make the results of lengthy and complex calculations available in a simple way to researchers of different areas. The main goal of this talk is to present new operator theory algorithms related to function factorization concepts, which have applications in the study of the invertibility of singular integral operators, in the analysis of the spectrum, and in the computation of the kernel of certain classes of operators. Several nontrivial examples computed with the algorithms are presented.

This is a joint work with Jéssica C. Pires.

Room *Sousa Pinto*

December 7, 2023 - 15:00

This seminar is supported in part by the Portuguese Foundation for Science and Technology (FCT - Fundação para a Ciência e a Tecnologia), through CIDMA - Center for Research and Development in Mathematics and Applications, within project UIDB/04106/2020.

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