

Area: Mathematics

Group: Métodos del análisis funcional para la teoría de operadores y el análisis tiempo frecuencia (MAFTOPATF) / Functional analysis methods for operator theory and time-frequency analysis

IP: Jornet Casanova, David ([ResearcherID](#), [ScopusID](#))

Co-IP: Jordá Mora, Enrique ([ResearcherID](#), [ScopusID](#))

Members:

Bonet Solves, José ([ResearcherID](#), [ScopusID](#))

Fernández Rosell, Carmen ([ScopusID](#))

Galbis Verdú, Antonio ([ResearcherID](#), [ScopusID](#))

Description of the research group:

We work on different problems of dynamics of operators on function or sequence spaces, and in several topics on harmonic analysis and its applications. More precisely, we investigate in:

1. Functional analysis and operator theory.
 - 1.1. Weighted spaces of holomorphic functions and operators between them.
 - 1.2. Cesàro, Toeplitz and other integral and matrix operators defined in Banach and Fréchet spaces of functions and sequences.
 - 1.3. Global spaces of smooth functions and operators between them.
2. Interplay of functional analysis, operator theory and harmonic and time-frequency analysis.
 - 2.1 Use of the Wigner transform to detect quasicrystals.
 - 2.2 Characterization of the sets that maximize the norm of localization operators.
 - 2.3 Applications of time-frequency analysis to global classes of smooth functions and operators between them.
 - 2.4 Dynamical properties of operators which appear frequently in harmonic analysis.
 - 2.5 Applications of time-frequency analysis to biomedical signals, in particular, to electrocardiogram signals.

We are supported by the research project Proyecto de Investigación del Plan Nacional PID2020-119457GB-I00. We maintain an intensive research activity with several foreign research groups (Austria, Belgium, Finland, Germany, Italy, Poland).

All the members of the group are lecturers of the Master Interuniversitario de Investigación Matemática, where they teach the contents related to functional analysis, operator theory, time-frequency analysis and dynamics.

Contact: David Jornet Casanova (djornet@mat.upv.es)