FIXED POINT THEORY, ULAM STABILITY AND RELATED APPLICATIONS

Organizers:

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Aims: It is an indisputable fact that both "Ulam Stability" and "Metric Fixed Point Theory" are among the most dynamic research fields of Nonlinear Analysis. Moreover, it has been clearly demonstrated that they are closely related to each other.

Ulam stability deals mainly with the following natural issue: when is it true that an approximate solution to an equation must be close to an exact solution of the equation. It is a quite new, but rapidly growing area of research with various possible applications. Motivated by the well-known problem of S. Ulam, concerning the approximate homomorphisms of metric groups, it has become nowadays an area of investigations of approximate solutions to a wide range of equations (e.g., difference, differential, integral, functional) and related fixed point results.

Due to its possible applications, Fixed Point Theory in the metric spaces plays a key role in Nonlinear Analysis. In the last fifty years, discussions on the existence and uniqueness of fixed points of single and multivalued operators in different kind of spaces (such as quasimetric spaces, pseudo-quasi-metric spaces, partial metric spaces, b-metric spaces and fuzzy metric spaces, among others) has attracted the attention of numerous researchers. The enormous potential of its applications to almost all quantitative sciences (such as Mathematics, Engineering, Chemistry, Biology, Economics, Computer Science, and others) justify the present great interest in this area. The purpose of this workshop is to bring together Mathematicians, but also other researchers that might be interested in this topic, to present, share and discuss their main advances (ideas, techniques, possible results, proofs, etc.) in this area.

Topics in this session include, but are not limited to: stability of difference, differential, functional, and integral equations, stability of inequalities and other mathematical objects, hyperstability and superstability, various (direct, fixed point, invariant mean, etc.) methods for proving Ulam's type stability results, generalized (in the sense of Aoki and Rassias, Bourgin and Gavruta) stability, stability on restricted domains and in various (metric, Banach, non-Archimedean, fuzzy, quasi-Banach, n-Banach, etc.) spaces, Ulam stability of operators, relations between Ulam's type stability and fixed point results, fixed point theory in various abstract spaces, existence and uniqueness of coupled/tripled/quadrupled fixed point, coincidence point theory, existence and uniqueness of common fixed points, well-posedness of fixed point results, advances on multivalued fixed point theorems, fixed point methods for the equilibrium problems and applications, iterative methods for the fixed points of the nonexpansive-type mappings, Picard operators on various abstract spaces, applications to various other areas.