THE CATHOLIC UNIVERSITY OF AMERICA
Washington, DC 20064

SEMINAR IN FUNCTIONAL ANALYSIS

AND RELATED AREAS

Wednesday, October 5, 2022

4:45 p.m. - 6:30 p.m.

SPEAKER: Brent W. Baccala
cosine@freesoft.org

TITLE: Continuing the algebraic study of differential equations

ABSTRACT: I will survey the development of algebraic techniques for solving differential equations beyond Liouville's theorem. Topics are expected to include an overview of Risch's algorithm for solving Abelian integrals, Bronstein's work extending this algorithm to handle arbitrary elementary integrals, Kovacic's algorithm for solving second-order linear ODEs with rational coefficients, Singer's work with third and higher order ODEs, differential Galois theory, and possible applications to linear PDEs.

PLACE: Aquinas Hall, room 108. The talk will be on Zoom as well (from 4:45 p.m. to 6:30 p.m. ET). The corresponding link will be sent to everyone in advance.

ORGANIZERS: V. Bogdan (The Catholic University of America), P. Kainen (Georgetown University), R. Kalpathy (The Catholic University of America), and A. Levin (The Catholic University of America).

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