Approximations, integral transforms, convergence, error control

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In this talk I will show my research projects in Approximation Theory, in particular operators theory, Partial Differential Equations, in particular existence and properties of travelling wave solutions for reaction-diffusion-convection equations, Analytic Number Theory, in particular additive problems and Special Functions Theory, in particular the study of closed forms for some classes of hypergeometric functions. Even if these fields seem distant from each other, I will prove that the problems I studied can be summarized, in some sense, in four essential ideas: approximations, integral transforms, convergence, error control.

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