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Sequences of Partial Defined Functions

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Abstract - The aim of the paper is to study the convergence of a sequence of partial defined functions and to study the properties of the limit function. To do this we will define and study a new type of convergence namely local convergence and uniform local convergence. The paper is divided in four parts. The first part is the introduction. In the second part we compare local convergence and uniform local convergence with simple and uniform convergence by studying the local convergence for functions with the same domain of definition. The third part contains the main results concerning local convergence. We will also compare local convergence with the convergence of the graphics of the functions in the Hausdorff-Pompeiu semidistance on the product space between the domain and codomain spaces of functions. The last part contains sufficient conditions for the uniform local convergence of partially defined functions.

Key words and phrases : Hausdorff-Pompeiu semidistance, partial defined function, local convergence, uniform local convergence

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