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Calculus rules of the generalized Kurdyka-Łojasiewicz property

In this work, we propose several calculus rules for the generalized Kurdyka-Łojasiewicz (KL) property, some of which generalize Li and Pong's results. We have shown in a parallel paper that the optimal desingularizing function has various forms and may be nondifferentiable. Our calculus rules do not assume desingularizing functions to have any specific form or differentiable, while the known results do. Several examples are also given to show that our calculus rules are applicable to a broader class of functions than the known ones.