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Arithmetic subderivatives: p-adic discontinuity and continuity. (English) Zbl 1453.11004
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Summary: In a previous paper, we proved that the arithmetic subderivative D_S is discontinuous at any rational point with respect to the ordinary absolute value. In the present paper, we study this question with respect to the p-adic absolute value. In particular, we show that D_S is in this sense continuous at the origin if S is finite or $p \notin S$.

MSC:

11A25 Arithmetic functions; related numbers; inversion formulas
11S82 Non-Archimedean dynamical systems
26A15 Continuity and related questions (modulus of continuity, semicontinuity, discontinuities, etc.) for real functions in one variable

Keywords:

arithmetic subderivative; arithmetic partial derivative; arithmetic derivative; continuity; p-adic absolute value

Software:

OEIS

Full Text: Link

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