

Report on the paper
El Omari:
New Connections between Hardy Fields
and the Definability in O-Minimal Expansions
by the referee

The title is inaccurate. Expansions of what are considered? The announced results are not uninteresting. The introduction including the overview on the existing literature is decent. But the notation is not well-chosen. Also Section 2 on examples is reasonable. But then the presentation becomes inadequate. It is not possible to check whether the proofs are valid. Let me indicate this for Section 3:

- p. 6, line 12: Why is this sufficient?
- p. 6, lines 16, 17: Why is φ_2 defined on $(0, \infty)$? The function φ_1 is only defined on $(0, \delta)$.
- p. 6, line 19: Why is $(0, \infty)$ the range of φ_2 ?
- p. 6, line 24: The r is between $\varphi_2(1)$ and $\varphi_2(1) + \varphi_2(t)$.
- p. 7, line -10: The definition of $s(t)$ cannot work; the denominator vanishes at a and b .
- p. 7, line -3: How is $S(t)$ defined on $[a - \Delta/2, a]$ and $[b, b + \Delta/2]$?
- p.8, line -6: The closure of V_i has to be taken in U .
- p. 8, lines - 5 to -3: Why do such functions exist? Lemma 3.5 speaks only about the univariate case.
- p. 9, line 4: What is U ? There is no U in the statement of Theorem 1.1 (a) & (b).
- p. 9, line 9: What is the reference [?, page 33, Thm. 1.6.2]?
- p. 9, line 14: What is Corollary ?? ?

Recommendation: In view of the above, I recommend rejection of the paper. In its current state, this preprint can be submitted nowhere. I suggest that the author thoroughly and accurately reworks the article and then submits it to another journal.