Review of: "Product of Distributions Applied to Discrete Differential Geometry"

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Potential competing interests: No potential competing interests to declare.

Report on the manuscript “Product of Distributions Applied to Discrete Differential Geometry” Vincenzo Nardozza

The research area of the paper under review is devoted to the formula for calculating the delta function's step discontinuous product. The total curvature of a polyhedron vertex using tensor calculus is estimated, and the Gaussian curvature is represented by a Dirac delta function. The author gives an analytic proof of the known results the Gauss-Bonnet theorem for smooth surfaces and the Descartes deficiency angle theorem for polyhedrons.

Though the proofs seem to be correct, the referee has the feeling that:

1. There is one significant flaw, but it has nothing to do with the writers or the paper: The list of references solely includes out-of-date sources, which serves as evidence that the paper's topic may be somewhat out-of-date. Therefore, it is uncertain to what extent this paper would pique the interest of the concerned journal's readership. I advise you to add the most recent papers on the topic to your reference list and to follow them.
2. It will be simpler to read if some details are included in the introduction portion of the article rather than the appendix, such as the Christoffel symbol.
3. Page 3: Formula (4) doesn't sound right. I think it would be better written in the sense of infinity limit.
4. Page 4: In Formula (9), it would be f(x)d(x) in the integrand.
5. There are some grammar mistakes in the paper. The English have to be polished. For example, it should use the word "section" instead of "paragraph". Attention should be paid to spelling, spelling mistakes, and capitalization throughout the article. Some minor corrections in typos:

- Page 1 see lines 2 from the top and end: evaluate of and deficency
- Page 2: approach 1, Page 4: proposition 1, Page 6: proposition 2, Page 7: proposition 2, …
- Page 2, in Proof 1: The sentence should be “Let F be a function…” instead of “Let F a function…”
- Page 2, Line 2 from the end: is missing brackets F(u(x))
- Page 2, Line 1 from the end: is missing F
- Page 3: Above of the formula (5) “the” is written twice.
- Page 4: Above of the formula (8), is missing brackets sign(x)
- Page 5, Line 3 from the end: the word-whit is written wrong
- Page 6, Line 5: The sentence sould be “The (19) defines at the…” intstead of “The (19) define at the…”

- Page 12, Line 3, The sentence sould be “In this case, the product of the step and delta function is not present in the various differentiable parameters.”
- Page 12, Line 8, “we” is written twice.

Best Regards