

Donald Saari, chief editor  
American Mathematical Society  
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Sept. 3, 2005

Dear Dr. Saari,

Find my edits herein to the first line of the paper:

Sun-Yung Alice Chang, Conformal Invariants and Partial Differential Equations, *Bulletin of the American Mathematical Society*, 42(3)365-393, July 2005.

I realize, of course, this paper should have been edited prior to publication.

Here is the original line, spaced as it appeared:

Our goal is to study quantities in Riemannian geometry which remain invariant under the “conformal change of metrics”-that is, under changes of metrics which stretch the length of vectors but preserve the angles between any pair of vectors.

That line should be edited to instead appear:

We study quantities in Riemannian geometry invariant to *conformal change of metric*; meaning, invariant under metric changes that stretch vector length while preserving angle between each and every vector pair.

The author states “Our goal is to study” which makes little sense. “Study” is not a goal; it is a process.

Action items:

- The author should confirm that conformal change of metric applies to stretching but not to shortening vector length; “stretch” is not inclusive of shorten.
- The author seems undecided whether to use plural “metrics” or its singular. Indiscriminate instances of both appear on the first two pages.

Edits:

1. “the” is overused: In this instance it implies there is only one “conformal change of metrics”, but that is contradicted by the plural “metrics”. A solution is to remove “the”.
2. “preserving the angles”: “the” is not needed here, plural “angles” is wrong; instead, *preserving angle* is accurate. “any pair” can be misconstrued to mean some condition is satisfied if angle is preserved between any one particular pair from a set of pairs. Substitution of *each and every* for “any” is more accurate.

3. “pair of vectors”: “of ” is overused, *vector pair* is better.
4. The author’s use of “which” is twice improper. The word *that* implies a filtering process; it discriminates particular instances from a set of candidates. In the author’s first case the candidates are “quantities”, but only those quantities *that* remain invariant are studied.

Use of conjunction “but” is correct although *while* provides simultaneity. I am happy to find “however” missing from the first few paragraphs. That word is the hallmark of a poor writer.

Writing well can spell the difference between a good paper and a great one. It is not sufficient to have English as one’s first language; one must have logged many thousands of hours writing and making all the common mistakes.

Mathematics requires precision; it cannot be rendered effectively as prose. The author’s meaning is obscured, her opening statement is ambiguous. Any counter-argument to the Edits regarding style versus mathematical grammar would, simply, be untenable.

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