

# Review of: "A Probability-Based Algorithm for Evaluating Climbing Difficulty Grades"

Teh Sabariah Abd Manan<sup>1</sup>

<sup>1</sup> Universiti Malaysia Terengganu

**Potential competing interests:** No potential competing interests to declare.

I like your article, it is fully comprehensive in theoretical mathematics. However, your readers are not only mathematicians but also including layman.

1. Please add your problem statement (one statement only, 15 words maximum in the first sentence of your abstract).
2. Please add your research takeaway at the final sentence of your abstract (25 words maximum). Are you producing Quentin index for the grading? or in the future. Mention this.
3. Okey see my comments in your abstract ya:

**(No 1 comment is here).** This paper describes a new mathematical model for the estimation of the grade of a climbing route namely **(put the name here, Quentin model maybe?)**. The calculation is based on the association of several route **(i.g. types of routes, name or examples)** and boulder sections **(i.g. types of boulders, name or examples)** separated by rests. Contrary to other similar methods **(examples here)**, this **Quentin** model introduces a probabilistic approach describing the uncertainty that one can have about the grade and the different feelings that climbers can have on a route grade. Mathematically, the problem takes the form of a data fitting with nonlinear functions that depends on a few parameters, where the inputs and output of the model are probability distributions. Fitted parameters **(R2=? or any other values?)** are optimized over a dataset containing information on well-established climbing routes. ~~Several aspects of the model are commented and studied. A short comparative study of some of the hardest routes in the world is also presented.~~ **(No 2 comment is here).**