

# **Answer to the second revision of « The genetic architecture of local adaptation in a cline » by Fabien Laroche & Thomas Lenormand**

Dear recommender of PCI Evolutionary Biology,

Thank you for your careful and fast revision of our revised manuscript. We addressed the comments made.

We hope that this new version will fully match the standards for a recommendation.

Yours sincerely,

On behalf of all the co-authors, Fabien Laroche

## **Detailed answers to comments**

1. (l. 246) "This requires simulating " The sentence is incomplete.

**This sentence was removed.**

2. (l. 340) "i.e.  $\sigma \sqrt{m} / l = \dots$ " Isn't there a square root of two missing on the left hand side of this equation? Otherwise equations 6 and 9 are inconsistent.

**The equation at l. 340 was correct. In order to ease double-checking, we now provide a new appendix (appendix B) where the computations of mutant invasion fitness are made explicit in Laplace and Gauss cases. However, we agree that there was an inconsistency. It came from the fact that we did not allocate a square-root of two factor to the right term between equations (11) and (12a). This is an error of presentation, not computation, and it has therefore no consequences on the rest of text (however it indeed led to this inconsistency). Thanks for pointing it out.**

**Note that, as a consequence, former appendix B has now become appendix C.**

3. Equation 12b. How can  $\alpha$  (as defined by equation 7b) depend on the mutant effect  $\epsilon$ ?

**We provided it at leading order. We added the first order term in  $\epsilon$  in equation 7b, and provided associated detailed computation in appendix B. Thanks for pointing this out.**

4. l. 375 " $l_G < l$ " Shouldn't it be " $l_G < l_{L(A)}$ "?

**Absolutely, we clarified.**

5. Throughout, "Gauss" --> "Gaussian" (please be consistent).

**We used « Gauss » consistently throughout the text. Otherwise we would have had to use "Laplacian" for consistency, which would have been confusing given the meaning of the term.**