About multigrid convergence of some length estimators
Rebuttal

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We would like to thank the Editor for the management of the review process of this manuscript.

The main criticism of the reviewers was the absence of proofs. As it is not possible to include the 13 pages of proofs in the paper, we decided for this rebuttal to propose online a technical report including the proofs. The technical report can be found at the following address: `http://icube-miv.unistra.fr/fr/img_auth.php/9/97/SparseLengthEstimators.pdf`

The correspondence between the submitted paper and the technical report is detailed Table 1. We give also some changes that occur.

Other else, we would like to emphasize the fact that this paper is a theoretical study and Fig. 3 is here only to illustrate the obtained results and it has not the ambition to be an experimental study.

The other points highlighted by the reviewers cannot be treated in the frame of this rebuttal.

Submitted paper	Technical report	Comments
Lem 1	Lem 1	hypotheses change from 1-Lipschitz to Lipschitz and detailed proof
	Cor 1	treats the errors due to the borders of the interval $[a, b]$ that are no more treated in the following lemmas
Eq (1)	Lem 2	hypotheses change from g is of class C^2 to g differentiable and g' Lipschitz continuous and detailed proof
Lem 2	Lem 3	detailed proof
Thm 3	Thm 3	same hypothesis changes as in Lem 1-2 and detailed proof
Lem 3	Lem 4	the hypothesis C^2 has been weakened and detailed proof
Lem 4	Lem 5	generalization to two piecewise affine functions and detailed proof
Thm 4	Thm 4	detailed proof
Prop 1	Prop 1	detailed proof
Lem 5	Lem 6	slight rewriting and detailed proof
Cor 1	Cor 2	slight rewriting and detailed proof
Prop 2		suppressed because an error in the proof (linked to the Schwarz's paradoxe) has been found
	Lem 7	technical lemma for lemma 4 (of the technical report), proved
	Lem 8	technical lemma for lemma 5 (of the technical report), proved
Appendix A	Appendix B	a detailed counterexample
Appendix B	Appendix C	detailed calculus of the inferior bound

Table 1: Correspondence between the submitted paper and the technical report and changes that occur