Errata

Rate of convergence for periodic homogenization of convex Hamilton–Jacobi equations in one dimension

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Lemma 2.8 *Let* $\mathcal{V} \in \mathrm{C}^2\big(\mathbb{R}, [0,\infty)\big)$ *with* $\min_{x\in\mathbb{R}} \mathcal{V}(x) = 0$. *There exists a constant* $L > 0$ *such that* $|\mathcal{V}\,'(x)| \leqslant L\sqrt{\mathcal{V}(x)}$ *for all* $x \in \mathbb{R}$. *As a consequence,* $x \mapsto \sqrt{\mathcal{V}(x)}$ *is Lipschitz in* $\mathbb{R}$.

Remark 1. There is an error in the published version of this Lemma in [1] where the author assumes only $\mathcal{V} \in \mathrm{C}^2\big([0,1], [0,\infty)\big)$ with $\min_{x\in\mathbb{R}} \mathcal{V}(x) = 0$ and $\mathcal{V}(0) = \mathcal{V}(1)$. A counter example is $\mathcal{V}(x) = x(1-x)$, which fails to have 0 derivative at 0 and thus $\mathcal{V}'(0) = 1$ while $\mathcal{V}(0) = 0$. The author is grateful to his advisor, H. Tran for pointing out this error and his suggestion on improving the Lemma.

References

[1] S.N.T. Tu, *Rate of convergence for periodic homogenization of convex Hamilton-Jacobi equations in one dimension*, Asymptotic Analysis 121, 2 (2021), 171–194.