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[Ref.: support letter for Prof. Xavier Waintal and KWANT Project](#)

Santiago, May 19, 2016

To Whom it may correspond

I am very glad to provide this letter in support of the KWANT project and the current initiatives aimed at improving and extending this already excellent project.

Over the last years, the research landscape has been experiencing dramatic changes. Issues such as open access and reproducibility are today understood to be crucial to foster advancement in all fields. Notwithstanding, translating this understanding into action has proven more complex than expected. We are still struggling to render publicly funded research accessible through a plethora of different repositories and reproducibility is still a pending issue. This is exactly where, I believe, projects like KWANT fill a gap of utmost importance.

To put it in a nutshell, KWANT is the most useful tool and paradigm shifting software in the field of quantum transport ever released, and, yes, it is open-source and it is fun to use. It combines the readability of a high level language like python with an amazing versatility to implement complex models to compute different electronic structure and charge/spin transport properties. Two remarkable features of Kwant:

- Kwant is open source, thereby allowing to transparently modify it or add new functions at will;
- Kwant offers a high-level implementation of complex tasks, reducing the human time for coding and allowing a much better experience when sharing a code with colleagues.

These features contribute to a different research workflow, one where thinking a problem is again the most crucial stage rather than implementing it. A workflow where different teams can boost their interaction by building on the work of the other either simultaneously or over time. Furthermore, one can simply share the code used in a paper as supplemental material or in the web, thereby catalyzing progress. Following the example posed by the developers of Kwant I decided to start publishing all the codes used in my research in my web.

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Personally, I would also like to emphasize how Kwant has impacted on my own research. I started using Kwant from the very release at the end of 2013. Up to now we have published several papers using Kwant (PRL 113, 266801 (2014); JPCM 27, 145303 (2015); PRA 92, 023624 (2015); PRB 93, 075438 (2016)) and so I consider myself as an early adopter and follower of this project. I immediately saw its potential for everyday work and especially for interacting with coworkers. This has proven to be particularly valuable with younger colleagues who needed a helping hand with their numerical codes. Kwant has sped up substantially, both the learning curve and the quality of their research.

Furthermore, I find that Kwant has a transformative power: young scientists in my group grow in a sharing and more collaborative environment. I'm confident that this will help the community as a whole by changing the way we interact with each other and by making a better use of our resources and efforts. Therefore, I give my unreserved recommendation to support this initiative.

Sincerely,

Dr. Luis E. F. Foà Torres
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currently on leave of absence from CONICET and Universidad Nacional de Córdoba
(Argentina).

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