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Letter of Support for Kwant project

With this Letter I would like to express my full support to the Kwant project and personally to its developers Xavier Waintal, Anton Akhmerov, Michael Wimmer, and Christoph Groth. Kwant is an open source project that is of a great added value for the research community.

Few years ago when Kwant was not yet released many groups had to re-create similar codes from scratch as a routing part of a PhD project. A talented PhD had to spend roughly two years for such a development. Still the product was often not optimized to the extent that it was more than 100 times less efficient than Kwant. We have seen the powerful example recently when our student managed to reproduce from scratch a set of 5 year old data in just one week on his laptop while the original data required 2 year code development and more than 60 hours of machine time on a multi-node cluster. Clearly, the added value of Kwant in this case is enormous.

Kwant is widely applied in our group for making quantum simulation of nano-scale devices and for testing disorder models. Very recently we have placed a draft [arXiv:1604.07623], (currently accepted for the publication in the Physical Review Letters) that would not be possible without the power of Kwant.

I also believe that Kwant project has a great potential for other applications, e.g. to provide necessary input interface characterization data for large-scale hydrodynamic modeling of complex electronic devices. Such modeling is vital e.g. for 7nm silicon technology. Similarly, I expect Kwant to penetrate the market of modeling spintronic devices.

To summarize, I would like to stress that Kwant is an efficient tool that is already of a great value for the research community. Further development of the project may make it useful also for companies making commercial products.

Yours Sincerely,

A handwritten signature in black ink, appearing to read 'Mikhail Titov', with a long horizontal stroke extending to the right.

Dr. Mikhail Titov