Subject: our paper
From: Philip Allen <philip.allen@stonybrook.edu>
Date: 9/22/2016 12:33 PM
To: Yerong Li <yerong.li@outlook.com>

Dear Yerong,

I hope things are OK in California. Things are fine here, but my progress has been a bit slow.

I have been re-writing the paper this week. Attached is a draft. You don't have to read it carefully right now, but there is a question for you on p.4 (bold face).

Also, I had an idea and wanted to ask you about it. Eq. 3 suggests that one simulation could give values of kappa(q) not just at the smallest q (2pi/L) but also at other q's, if H(q) had higher Fourier components. It would interest me to think about a simulation in which H(x) had two components, H_1 sin (2pi x/L) + H_2 sin (4pi x/L). Then both kappa(2pi/L) and kappa(4pi/L) could be extracted from the same run. Why would this be interesting? First, knowing both helps in the extrapolation. But of course, we don't need to do it that way since it is natural to do simulations for a series of different L's, and the kappa(4pi/L) can be gotten twice as cheaply by using L/2 as the cell size. However, the answer for kappa(4pi/L) would be more accurate with the larger L than with the L/2 cell! So this would give an measure of a slightly different type of error or uncertainty in the answer. That's the second reason why it would be interesting. Of course, it is also possible to use heating H(x)=H sin(4pi x/L) in a cell of size L, without the confusion of two Fourier components, but that wastes time if two can be extracted at the same time.

What do you think? In particular, do you still have access to your codes, and if so, would you be interested and able to do such a calculation?

Yours truly,
Phil

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Attachments:

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