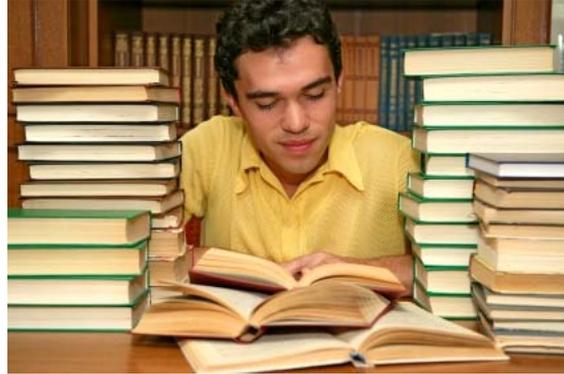


Abstracts—One More Time



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The purpose of an abstract is to get somebody to come to your talk or read your paper

Attract her attention in the first sentence

- **What did you *do*?**
- **What's new?**
- **Why is it interesting?**



An abstract must “stand alone” — it cannot refer to anybody’s work but your own (or your group’s)

Think about it—

- 1. If you refer to somebody’s else’s work, you must reference it**
- 2. References are not allowed in an abstract**

***Ergo*—an abstract says what YOU did, what YOU found, and what YOU think it means**

Hew to this formula witlessly:

- 1. State immediately what you are reporting**
- 2. Explain why it’s important**
- 3. Describe the methods you used in sufficient detail so the reader knows if your work is relevant to his or hers**
- 4. Summarize your key results**
- 5. Tell the reader what you think the results mean (and their implications for future work)**

Do not put anything else in your abstract

No introductory fluff

Get straight to the point—immediately



Maybe ONE introductory sentence,
but no more than one!

Example 1: Sequence-dependent ion current modulations in biological and synthetic nanopores

Aleksei Aksimentiev, University of Illinois at Urbana-Champaign

The possibility of DNA sequence detection by measuring the blockade ionic current in nanopores has been the driving force for the spectacular development of the nanopore research field...Here, we report the results of extensive all-atom molecular dynamics and Brownian dynamics simulations of three nanopore systems: a biological nanopore MspA, a solid-state nanopore and a graphene nanopore, aimed at elucidating the microscopic mechanism of the ion current modulation. In the case of solid-state and graphene nanopores, we determined the effect of sequence convolution on the ionic current value by simulating the ionic current blockades produced by all 64 permutations of the DNA nucleotide triplets. In the case of MspA, we determined the effect of the sequence, the global orientation, and the conformation of a DNA strand on the distribution of the ion current blockades. Based on the results of our simulations, we suggest possible routes for increasing the resolution of DNA sequence detection by measuring the nanopore ionic current and describe the inherent limitations of the method.

<http://meetings.aps.org/link/BAPS.2012.MAR.B44.1>

Example 2:

Dynamic screening and the effective fine structure constant of graphene

Peter Abbamonte, University of Illinois at Urbana-Champaign

Electrons in graphene behave, in the low energy sector, like massless Dirac fermions. The degree to which Coulomb correlations influence these fermions is still subject to debate. In this talk I will describe inelastic x-ray scattering experiments on crystals of graphite, to which we have applied newly developed reconstruction algorithms to image the dynamical screening of charge in (effectively) a freestanding graphene sheet. We found that the polarizability of the Dirac fermions in graphene is amplified by excitonic effects in the particle-hole spectrum, which enhances screening of interactions among low energy quasiparticles. I will argue that interactions should be characterized by an effective, screened fine-structure constant, $\alpha_g^*(\mathbf{k}, \omega)$, which our measurements suggest converges to the value $\alpha_g^* = 0.14 \pm 0.092$ in the small wave vector limit. This value is smaller than the bare $\alpha_g = 2.2$, and suggests that the strength of interactions in graphene is similar to that in band semiconductors like Si or GaAs. I will discuss the implications of this result for other Dirac systems, such as nodal quasiparticles in cuprates and topological insulator surface states.

<http://meetings.aps.org/link/BAPS.2012.MAR.A27.1>

Check your (almost) finished abstract

Are ideas expressed clearly and concisely?

Eliminate every superfluous word and all jargon.

Are the words familiar and precise?

Have you used standard nomenclature and notation?

Have you observed standard stylistic conventions?

third person/passive voice?

straightforward, unemotional narration?

Is the text free of grammatical mistakes and

typographical errors?

Does the length of the abstract conform to instructions

from the journal or the meeting organizers?