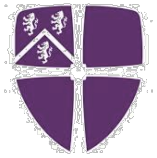
CVs, Research Statements, and all that

Nabil Iqbal

Durham University

A little about me

- Work in string theory and quantum field theory.
- From Jan 2017, assistant professor at Durham.
- Postdocs at University of Amsterdam, KITP
- PhD at MIT
- Written many applications
- Started reading them recently.



Fundamental principle

- Committee will read hundreds and hundreds of applications.
- Goal: make important information easy to access.

CV

- A glance at the CV should reveal all important info.
- Must be scannable to the eye.
- Pick a standard template and alter it.
- Adhere to standard conventions -- reverse chronological order, etc.
- Alter emphasis depending on position (e.g. if faculty job, emphasize teaching, etc.)
- Get feedback!

CV: example

Good: scannable (clear section headings, boldface, etc.)

Nabil Iqbal
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Massachusetts Institute of Technology
Center for Theoretical Physics, 6-413
77 Massachusetts Avenue
Cambridge, MA 02139

Education

- **Massachusetts Institute of Technology, Cambridge, MA** — **2006-2011**
  PhD in Physics at Center for Theoretical Physics — June 2011
  Thesis: "Holography and Strongly Correlated Systems"
  Advisor: Hong Liu.
- **Cornell University, Ithaca, NY** — **2002-2006**
  Bachelor of Arts (B.A.) in Physics and Mathematics

Conferences/Summer Schools

Good: reverse chronological order, trajectory visible at a glance.

- **AdS/CFT: Condensed Matter, Holographic QCD and Fluid Mechanics** — **June 2010**
  McGill University, Montreal, Canada

CV: example

Bad: (stylistic) Title "Curriculum vitae" is unnecessary. Delete it.

Bad: no line summarizing my field of research! (Have to infer it from the title of my thesis…?)

Bad: I have awards, invited talks, to distinguish me, but they are further down in the CV: should put them earlier.

CURRICULUM VITAE

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Research statement

- Take it seriously: your chance to really give an overall impression of your work.
- (My opinion): take a step back, show overall vision
  - Harder and so will set you apart.
  - Makes it understandable to people in a slightly different subfield.
- Use pictures, plots, etc. if it makes sense
- Get feedback! (advisor, peers, etc.)

Research statement: example

fields of physics, from quantum field theory and condensed matter physics to general relativity and string theory. A central theme of my work is the idea that holography suggests a surprising unity of physics that naturally weaves these previously disparate threads together.

1 Strongly correlated physics from holography

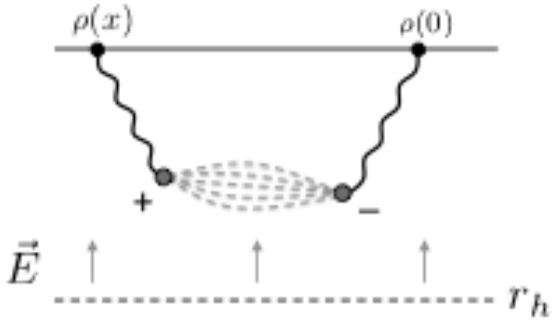

Figure 1: Bulk magnetic monopole events interact with electric field sourced by horizon (dual to boundary charge density), resulting in Friedel oscillations in the b

Traditionally, quantum field theory is organized as a theory of particles, each of which is essentially treated individually. Each particle's interaction with its compatriots is a troublesome p tion. While the resulting structure of perturbative quantum field theory is wildly successful, it is not a good starting point for the description of many phenomena of physical interest – such as liquid phases of matter – where the interactions between particles are of crucial importance.

Holography provides us with a new way to attack such problems by presenting a novel classical limit to quantum field theory, one where the gravitational side of the duality is weakly interacting precisely when the field theory is strongly correlated. For example, quantum liquids are described within field theory as states at finite temperature and density, which may be easily studied within holography: they are dual to black holes in the gravitational description. We may study different phases of matter in this way, ranging from hot plasmas to analogs of "metals" to strongly coupled superfluids. My dissertation research primarily involved the computation of observables associated with these novel phases of matter: we calculated transport coefficients for strongly coupled plasmas, examined the transport properties of exotic fermionic excitations on these backgrounds, and studied the

Good: General discussion before becoming detailed.

Good: Picture!

Academic interview

- For faculty jobs this is very important.
- Goal: do not construct answers during interview; know them already by anticipating question.
- Best way: arrange mock interview. Preferably with senior people you don't know well.

Summary

- Make information that distinguishes you easy to find.
- Put some time into preparing all parts of application.
- Get feedback!

The end.