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Dissertation

THE TITLE OF THE DISSERTATION IN ALL CAPITAL LETTERS BOLD AND CENTERED

by

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Submitted in partial fulfillment of the

requirements for the degree of

Doctor of Philosophy

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Dedicated to your family or wife/husband or something.

ACKNOWLEDGMENTS

You might want to thank the people who helped you write this work. Your advisor and committee, archivists and librarians, your best friends, your spouse, your study buddy.

THE TITLE OF THE DISSERTATION

IN ALL CAPS AND BOLD AND CENTERED

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ABSTRACT

The body of your abstract goes here. Note that a docteral disseration is limited to 350 words!

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LIST OF ABBREVIATIONS

HDA . . . . . High-Density Amorphous ice

HDL . . . . . High-Density Liquid

LDA . . . . . Low-Density Amorphous ice

LDL . . . . . Low-Density Liquid

LLCP . . . . . Liquid-Liquid Critical Point

LLPT . . . . . Liquid-Liquid Phase Transition

RDF . . . . . Radial Distribution Function

TMD . . . . . Temperature of Maximum Density

TmD . . . . . Temperature of minimum Density

CHAPTER 1: Introduction

1.1 Title of first section

To add a citation simply use "cite" like [2] and [4, 1, 3]. To refer to a figure such as Fig. 1.1, we use "ref" instead. Oh, and make sure you put a "connecting space" between values and their unit, like in 300 K and $T = 450$ K and $\chi_P \approx 4\pi$ cm^2, etc. which prevents a line ending with "300" and the next starting with "K". You can also refer to chapters via their label, like this chapter which is Chapter 1 and you can also refer to Sec. 1.2 this way.

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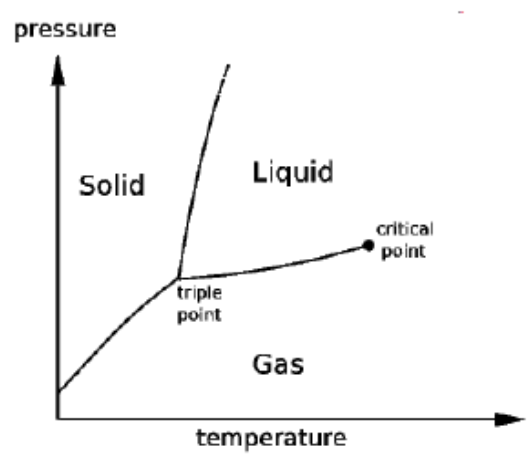

Figure 1.1: Standard phase diagram with the three stable phases as a function of temperature and pressure.

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People	Graduated in	Important info
Erik Lascaris	2014	Favorite equation: $e^{i\pi} = -1$
Kevin Stokely	2012	Postdoc at Columbia University
Marco Mazza	2009	Max Planck Institute for Dynamics and Self-Organization

Table 1.1: Several grad students of Gene Stanley's group. Note that it is simple to add formulas everywhere.

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$$D = \frac{k_B T}{6\pi\eta r} \tag{1.1}$$

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$$\begin{aligned} S(k) &= 1 + \rho \int [g(r) - 1] \exp\left(-i\mathbf{k}\cdot\mathbf{r}\right) \, \mathrm{d}^3\mathbf{r} \\ &= 1 + 4\pi\rho \int_0^\infty [g(r) - 1] \, \frac{\sin(kr)}{kr} r^2 \, \mathrm{d}r \end{aligned} \tag{1.2}$$

with $\rho = N/V$ the number density.

1.2 Another section

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CHAPTER 2: My second chapter

2.1 Introduction of 2nd chapter

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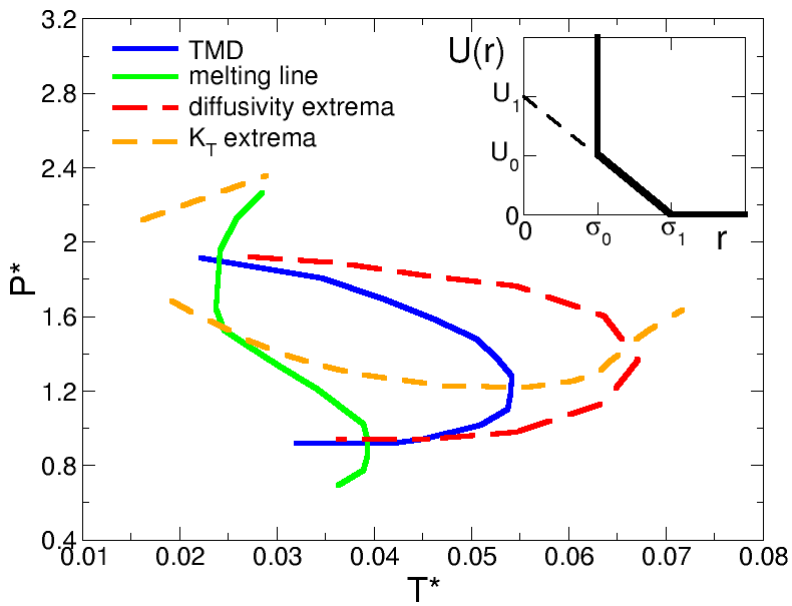

Figure 2.1: Figure of some phase diagram.

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CHAPTER 3: Conclusions and outlook

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APPENDIX: My appendix title

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[3] E. Lascaris, T. A. Kesselring, G. Franzese, S. V. Buldyrev, H. J. Herrmann, and H. E. Stanley, "Response Functions near the Liquid-Liquid Critical Point of ST2 Water", in: *4th International Symposium on Slow Dynamics in Complex Systems*, ed. by M. Tokuyama and I. Oppenheimer, vol. 1518, AIP Conf. Proc., Dec. 2013, pp. 520–526.

[4] E. Lascaris, G. Malescio, S. V. Buldyrev, and H. E. Stanley, *Physical Review E* **81**, 031201 (2010).

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LIST OF PUBLICATIONS

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- J. Luo, L. Xu, E. Lascaris, H. E. Stanley, and S. V. Buldyrev, *Behavior of the Widom Line in Critical Phenomena*, Phys. Rev. Lett. **112**, 135701 (2014)

- T. A. Kesselring, E. Lascaris, G. Franzese, S. V. Buldyrev, H. J. Herrmann, and H. E. Stanley, *Finite-size scaling investigation of the liquid-liquid critical point in ST2 water and its stability with respect to crystallization*, J. of Chem. Phys. **138**, 244506 (2013)

- E. Lascaris, T. A. Kesselring, G. Franzese, S. V. Buldyrev, H. J. Herrmann, and H. E. Stanley, *Response functions near the liquid-liquid critical point of ST2 Water*, in Slow Dynamics in Complex Systems, edited by M. Tokuyama, AIP Conference Proceedings **1518**, 520–526 (2013)

- E. Lascaris, G. Malescio, S. V. Buldyrev, and H. E. Stanley, *Cluster formation, waterlike anomalies, and re-entrant melting for a family of bounded repulsive interaction potentials*, Phys. Rev. E **81**, 031201 (2010)

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- Jan. 2012: *Phase flipping in ST2 water near its hypothesized liquid-liquid critical point*, Mini Stat Mech meeting at UC Berkeley

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