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PDF Chapter 1

Statistical

*Chapter 1*

*Statistical*

*al*

*Mechanics*

*A Brief*

*Overview*

*Nptel*

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PDF Chapter 1

Statistical  
Mechanics A Brief  
Lecture 1 1.

Thermodynamics Part 1

*Statistical Mechanics*

*Lecture 9 Statistical*

*mechanics | lec-27/*

*Ising Model* **Statistical**

**Mechanics - Week 1 |**

**Lecture 1** *The Building*

*Blocks of Risk*

*Management (FRM Part*

*1 2020 – Book 1 –*

*Chapter 1) Introduction*

~~to Statistical Physics~~

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~~Statistical  
University Physics  
Mechanics A Brief  
Lecture 1 | Modern  
Physics: Statistical  
Mechanics~~

~~Distinguishable and~~

~~Indistinguishable~~

~~Particles | Statistical~~

~~Mechanics Random~~

~~Walk | Statistical~~

~~Mechanics | CSIR NET~~

~~JRF | GATE | lec-02~~

~~Statistical mechanics |~~

~~lec-25~~

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Inside Black Holes |

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PDF Chapter 1

Statistical  
Leonard Susskind  
Richard Feynman on  
Quantum Mechanics

Part 1 - Photons

Corpuscles of Light The  
Laws of

Thermodynamics,

Entropy, and Gibbs Free

Energy *Mathematical*

*Physics 01 - Carl*

*Bender Classical*

*Mechanics / Lecture 1*

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Statistical Entropy

*Cosmology Lecture 1*

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Statistical  
*Lecture 1 / String  
Theory and M-Theory*

**The N-Particle**

**Partition Function -**

**Statistical Physics -**

**University Physics**

*Fermi-Dirac and Bose-*

*Einstein statistics -*

*basic introduction*

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Statistical Mechanics |

Books | Important

Topics | How to Study |

CSIR NET JRF | GATE

| lec-01 Macrostate and

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PDF Chapter 1

Microstates | Statistical  
Mechanics Random  
Walk Problems|

Statistical Mechanics|

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lec-04 Statistical

*mechanics / lec-19*

**Lectures on Statistical**

**Mechanics -- S1 LEC-1**

Macrostates and

Microstates

**Introduction to**

**Complexity: Entropy**

**and Statistical**

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PDF Chapter 1

Statistical

**Mechanics Part 1**

**Chapter 1 Statistical**

**Mechanics A**

1 Basics of Statistical

Mechanics of Short-

Range Interacting

Systems; 2 Equilibrium

Statistical Mechanics of

Long-Range

Interactions; 3 The

Large Deviations

Method and Its

Applications; 4

Solutions of Mean Field

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PDF Chapter 1

Statistical  
Models; 5 Beyond Mean-  
Field Models; 6  
Quantum Long-Range  
Systems; Part II  
Dynamical Properties

**Basics of Statistical  
Mechanics of Short-  
Range Interacting ...**

The notions of Chapter  
1 are extended here to  
systems of many  
individuals (thus many  
degrees of freedom),



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PDF Chapter 1

Statistical  
Mechanics A Brief  
Overview Nptel  
now seen from a  
statistical viewpoint. In  
the phase space, the  
chapter shows

Liouville's theorem of  
volume preservation and  
deduce the Boltzmann  
equation for the  
probability density of  
molecular velocities.

**Statistical mechanics -  
Oxford Scholarship**

I begin with a review of

*Page 9/56*

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## PDF Chapter 1

Statistical  
Mechanics: A Brief  
Overview Nptel

basic ideas from  
thermodynamics and  
statistical mechanics.

Some books are  
suggested at the end of  
the chapter [1–4]. In the  
beginning there was  
thermodynamics. It was  
developed before it was  
known that matter was  
made of atoms. It is  
notorious for its  
multiple but equivalent  
formalisms and its orgy

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PDF Chapter 1

Statistical

of partial derivatives.

Mechanics A Brief

Overview Notes

**Thermodynamics and**

**Statistical Mechanics**

**Review (Chapter 1 ...**

Chapter 1 the first law

of thermodynamics.

Avogadro's number is

the frame of reference

for the magnitude of the

system. Despite

complexity at the atomic

level, these systems

obey certain laws

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PDF Chapter 1

Statistical  
mechanics: macroscopically:  
temperature equalization  
through thermal contact.

**PHYS 3327 Chapter**

**Notes - Chapter 1.1:**

**Statistical Mechanics**

Selected Solutions to

McQuarrie's Statistical

Mechanics Chapter 1.

Problem 1-49

Maximize. with respect

to each under the

constraints that.

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PDF Chapter 1

Solution: Apply, first, Stirling's approximation to, giving. But, one of the constraints states that so this gives. Then, necessarily.

**Selected Solutions to  
McQuarrie's  
Statistical Mechanics**

...

Mcquarrie Statistical  
Mechanics Solutions

*Page 13/56*

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PDF Chapter 1

Chapter 1 Statistical  
Mechanics A Brief  
Overview Notel

Chapter 1 Statistical mechanics in itself can be a bit difficult to understand, but McQuarrie is one of the best authors I have come across. I'd definitely recommend this book because it really goes in depth with explaining stat mech but in such a way that you'll be able to follow!

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PDF Chapter 1

Statistical  
**Mcquarrie Statistical  
Mechanics A Brief**

**Chapter 1** Overview Nptel

1.1 Classical spin systems The topic of this chapter is classical spin systems on the lattice. Classical spin systems are idealized versions of magnets.

Although many magnetic phenomena in materials are inherently quantum mechanical, a

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PDF Chapter 1

Statistical  
Mechanics: A Brief  
Overview Notes

many properties are well described at least qualitatively by classical spin systems. In fact, we will see in the next chapter that one can

**Chapter 1 Basic  
classical statistical  
mechanics of lattice ...**

Statistical mechanics can be considered as one of the pillars of modern physics. It is



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## PDF Chapter 1

### Statistical

useful in the  
fundamental study of  
the physical system with  
numerous degrees of  
freedom. The approach  
is usually based on  
probability theory,  
statistical methods, and  
microscopic physical  
laws. In this short piece  
of article, we will be  
discussing more  
statistical mechanics  
and statistical

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PDF Chapter 1

thermodynamics, a  
branch that extends and  
treats classical  
thermodynamics.

**Statistical Mechanics -  
Introduction to  
Thermodynamics ...**

Chapter 1 introduction  
to statistics 1. Chapter 1  
Introduction to Statistics  
Larson/Farber 4th ed. 1  
2. Chapter Outline • 1.1  
An Overview of

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PDF Chapter 1

Statistics • 1.2 Data  
Classification • 1.3

Experimental Design

Larson/Farber 4th ed. 2

3. Section 1.1 An

Overview of Statistics

Larson/Farber 4th ed. 3

4.

**Chapter 1 introduction  
to statistics -**

**SlideShare**

Study the statistical  
mechanics of an

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PDF Chapter 1

Statistical  
Mechanics A Brief  
Overview Nptel

extreme relativistic gas characterized by the single-particle energy states. instead of (1.4.5), along the lines followed in Section 1.4. Show that the ratio  $C_P/C_V$  in this case is  $4/3$ , instead of  $5/3$ .

**Solved: Study the statistical mechanics of an extreme ...**

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Statistical  
Mechanics, A Brief  
Solutions Chapter 1

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Mcquarrie Statistical

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**Mcquarrie Statistical  
Mechanics A Brief  
Chapter 1 | pdf ...**

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Edexcel A-level Maths  
Year 1 Statistics and  
Mechanics. Statistics  
Topics Include: Data  
Collection Measures of  
Location & Spread R...

**A-Level Maths Year 1  
Stats & Mechanics  
Revision | Teaching ...**

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PDF Chapter 1

Statistical  
Mechanics: A Brief  
Overview Nptel

2 Reviews. 'This is an excellent book from which to learn the methods and results of statistical mechanics.'. Nature 'A well written graduate-level text for scientists and engineers... Highly...

**Statistical Mechanics -  
Paul D. Beale - Google  
Books**

atoms. Just a little later,  
*Page 23/56*

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## PDF Chapter 1

Statistical  
Mechanics A Brief  
Overview Nptel

the application of statistical mechanics to a box of light (the subject of our Chapter 7) and to electrons in a solid (Chapter 9) were the two crucial clues that led to quantum mechanics. Much more recently, the existence of a strong analogy between the

### **8.044 Lecture Notes**

*Page 24/56*



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PDF Chapter 1

Statistical

**Chapter 1:**

**Introduction to ...**

Statistical Mechanics

Chapter 1 Topic - Phase

Space Statistical

Mechanics for M.Sc.

**Statistical Mechanics**

**Chapter 1**

Introduction In a

comprehensive

treatment of Statistical

Mechanics from

thermodynamics

*Page 25/56*

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PDF Chapter 1

Statistical

through the

renormalization group,

this book serves as the

core text for a full-year

graduate course in

statistical mechanics at

either the Masters or

Ph.D. level.

**Statistical Mechanics |**

**SpringerLink**

This chapter reviews the

elementary statistical

properties of a single

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## PDF Chapter 1

Statistical  
Mechanics: A Brief

polymer chain in  
solvents of different  
nature. Starting with the

ideal random coil

conformation and its

tension–elongation

relation, the excluded-

volume effect is

introduced to study the

swelling and collapse of

a random coil. We then

focus on the

conformational

transition of a polymer

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PDF Chapter 1

Statistical  
chain by hydrogen  
bonding.

Overview Nptel

**Statistical properties  
of polymer chains  
(Chapter 1 ...**

Talanquer VA. Chapter  
1 Statistical mechanics  
of fluid interfaces.

Interface Science and  
Technology.

2004;4(C):1-32. [https://doi.org/10.1016/S1573-4285\(04\)80003-6](https://doi.org/10.1016/S1573-4285(04)80003-6)

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Statistical  
Mechanics A Brief  
Overview Nptel

Statistical Mechanics  
Lecture 1 1.

Thermodynamics Part 1

*Statistical Mechanics*

*Lecture 9 Statistical*

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*Ising Model* **Statistical**

**Mechanics - Week 1 |**

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*Blocks of Risk*

*Management (FRM Part*

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*1 2020 – Book 1 –  
Chapter 1) Introduction*

~~to Statistical Physics –~~

~~University Physics~~

Lecture 1 | Modern

Physics: Statistical

Mechanics

~~Distinguishable and~~

~~Indistinguishable~~

~~Particles | Statistical~~

~~Mechanics Random~~

~~Walk | Statistical~~

~~Mechanics | CSIR NET~~

~~JRF | GATE | lec-02~~

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Statistical mechanics |  
Mechanics A Brief  
lec 25

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Inside Black Holes |

Leonard Susskind

Richard Feynman on

Quantum Mechanics

Part 1 - Photons

Corpuscles of Light The

Laws of

Thermodynamics,

Entropy, and Gibbs Free

Energy *Mathematical*

*Physics 01 - Carl*

*Bender Classical*

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*Mechanics / Lecture 1*

Statistical Entropy

*Cosmology Lecture 1*

*Lecture 1 / String*

*Theory and M-Theory*

**The N-Particle**

**Partition Function -**

**Statistical Physics -**

**University Physics**

*Fermi-Dirac and Bose-*

*Einstein statistics -*

*basic introduction*

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Statistical Mechanics |

Books | Important



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Statistical  
Mechanics A Brief  
Overview Notes  
Topics | How to Study |  
CSIR NET JRF | GATE

| lec-01 Macrostate and  
Microstates | Statistical  
Mechanics Random

Walk Problems|

Statistical Mechanics|

CSIR NET JRF | GATE|

lec-04 *Statistical*

*mechanics / lec-19*

**Lectures on Statistical**

**Mechanics -- S1 LEC-1**

Macrostates and

Microstates

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PDF Chapter 1

Statistical  
Mechanics A Brief  
Overview Nptel

**Introduction to  
Complexity: Entropy  
and Statistical**

**Mechanics Part 1**

**Chapter 1 Statistical  
Mechanics A**

1 Basics of Statistical  
Mechanics of Short-  
Range Interacting  
Systems; 2 Equilibrium  
Statistical Mechanics of  
Long-Range  
Interactions; 3 The  
Large Deviations

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PDF Chapter 1

Statistical  
Method and Its  
Applications; 4

Solutions of Mean Field  
Models; 5 Beyond Mean-  
Field Models; 6

Quantum Long-Range  
Systems; Part II

Dynamical Properties

**Basics of Statistical  
Mechanics of Short-  
Range Interacting ...**

The notions of Chapter  
1 are extended here to

*Page 35/56*

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## PDF Chapter 1

### Statistical

systems of many individuals (thus many

degrees of freedom),

now seen from a

statistical viewpoint. In

the phase space, the

chapter shows

Liouville's theorem of

volume preservation and

deduce the Boltzmann

equation for the

probability density of

molecular velocities.

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PDF Chapter 1

**Statistical mechanics -  
Mechanics A Brief  
Oxford Scholarship**

I begin with a review of basic ideas from thermodynamics and statistical mechanics.

Some books are suggested at the end of the chapter [1–4]. In the beginning there was thermodynamics. It was developed before it was known that matter was made of atoms. It is

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PDF Chapter 1

Statistical  
Mechanics: A Brief  
Overview Nitel

notorious for its  
multiple but equivalent  
formalisms and its orgy  
of partial derivatives.

**Thermodynamics and  
Statistical Mechanics  
Review (Chapter 1 ...**

Chapter 1 the first law  
of thermodynamics.

Avogadro's number is  
the frame of reference  
for the magnitude of the  
system. Despite

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PDF Chapter 1

Statistical  
Mechanics, A Brief  
Overview, Nptel

complexity at the atomic level, these systems

obey certain laws

macroscopically:

temperature equalization through thermal contact.

**PHYS 3327 Chapter**

**Notes - Chapter 1.1:**

**Statistical Mechanics**

Selected Solutions to

McQuarrie's Statistical

Mechanics Chapter 1.

Problem 1-49

*Page 39/56*

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PDF Chapter 1

Statistical  
Mechanics A Brief  
Overview Nptel

Maximize. with respect  
to each under the  
constraints that.

Solution: Apply, first,  
Stirling's  
approximation to ,  
giving. But, one of the  
constraints states that so  
this gives. Then,  
necessarily.

**Selected Solutions to  
McQuarrie's  
Statistical Mechanics**

*Page 40/56*



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PDF Chapter 1

Statistical

...

McQuarrie Statistical

Mechanics Solutions

Chapter 1 Statistical

mechanics in itself can

be a bit difficult to

understand, but

McQuarrie is one of the

best authors I have

come across. I'd

definitely recommend

this book because it

really goes in depth with

explaining stat mech but

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PDF Chapter 1

in such a way that you'll  
be able to follow!

Overview Nptel

**Mcquarrie Statistical  
Mechanics Solutions  
Chapter 1**

1.1 Classical spin  
systems The topic of  
this chapter is classical  
spin systems on the  
lattice. Classical spin  
systems are idealized  
versions of magnets.

Although many

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PDF Chapter 1

Statistical

Mechanics: A Brief

Overview Nptel

magnetic phenomena in materials are inherently quantum mechanical, a many properties are well described at least qualitatively by classical spin systems. In fact, we will see in the next chapter that one can

**Chapter 1 Basic  
classical statistical  
mechanics of lattice ...**

Statistical mechanics

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## PDF Chapter 1

### Statistical

can be considered as one of the pillars of

Mechanics. A Brief

Course by Nptel

modern physics. It is

useful in the

fundamental study of

the physical system with

numerous degrees of

freedom. The approach

is usually based on

probability theory,

statistical methods, and

microscopic physical

laws. In this short piece

of article, we will be

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PDF Chapter 1

Statistical  
Mechanics A Brief  
Overview Nptel

discussing more  
statistical mechanics  
and statistical  
thermodynamics, a  
branch that extends and  
treats classical  
thermodynamics.

**Statistical Mechanics -  
Introduction to  
Thermodynamics ...**

Chapter 1 introduction  
to statistics 1. Chapter 1  
Introduction to Statistics

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Statistical  
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Overview Notel

Larson/Farber 4th ed. 1  
2. Chapter Outline • 1.1

An Overview of  
Statistics • 1.2 Data  
Classification • 1.3

Experimental Design

Larson/Farber 4th ed. 2

3. Section 1.1 An  
Overview of Statistics

Larson/Farber 4th ed. 3

4.

**Chapter 1 introduction  
to statistics -**

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PDF Chapter 1

Statistical

**SlideShare**

Mechanics A Brief

Overview Nptel

Study the statistical mechanics of an extreme relativistic gas characterized by the single-particle energy states. instead of (1.4.5), along the lines followed in Section 1.4. Show that the ratio  $C_P / C_V$  in this case is  $4/3$ , instead of  $5/3$ .

**Solved: Study the**

*Page 47/56*

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**Statistical  
Mechanics A Brief  
Overview Notes**  
**statistical mechanics of  
an extreme ...**

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Year 1 Statistics and  
Mechanics. Statistics  
Topics Include: Data  
Collection Measures of  
Location & Spread R...

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**A-Level Maths Year 1  
Stats & Mechanics A Brief  
Revision | Teaching ...**

2 Reviews. 'This is an excellent book from which to learn the methods and results of statistical mechanics.'. Nature 'A well written graduate-level text for scientists and engineers... Highly...

**Statistical Mechanics -**  
*Page 50/56*

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PDF Chapter 1

Statistical  
**Paul D. Beale - Google  
Books**  
Mechanics A Brief  
Overview.html

atoms. Just a little later, the application of statistical mechanics to a box of light (the subject of our Chapter 7) and to electrons in a solid (Chapter 9) were the two crucial clues that led to quantum mechanics. Much more recently, the existence of a strong analogy

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PDF Chapter 1

Statistical

between the

Mechanics A Brief

8.044 Lecture Notes

**Chapter 1:**

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Statistical Mechanics

Chapter 1 Topic - Phase

Space Statistical

Mechanics for M.Sc.

**Statistical Mechanics**

**Chapter 1**

Introduction In a

comprehensive

*Page 52/56*

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PDF Chapter 1

Statistical  
Mechanics from  
thermodynamics

through the  
renormalization group,  
this book serves as the  
core text for a full-year  
graduate course in  
statistical mechanics at  
either the Masters or  
Ph.D. level.

**Statistical Mechanics |**  
**SpringerLink**

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## PDF Chapter 1

### Statistical

### Mechanics, A Brief

### Overview, Nptel

This chapter reviews the elementary statistical properties of a single polymer chain in solvents of different nature. Starting with the ideal random coil conformation and its tension–elongation relation, the excluded-volume effect is introduced to study the swelling and collapse of a random coil. We then

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PDF Chapter 1

Statistical

focus on the

conformational

transition of a polymer

chain by hydrogen

bonding.

**Statistical properties**

**of polymer chains**

**(Chapter 1 ...**

Talanquer VA. Chapter

1 Statistical mechanics

of fluid interfaces.

Interface Science and

Technology.

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Statistical  
Mechanics: A Brief  
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2004;4(C):1-32. [https://doi.org/10.1016/S1573-4285\(04\)80003-6](https://doi.org/10.1016/S1573-4285(04)80003-6)