

Ruthenate And Rutheno Cuprate Materials Unconventional Superconductivity Magnetism And Quantum Phase Transitions

[#Ruthenate materials](#) [#Rutheno Cuprate](#) [#Unconventional Superconductivity](#) [#Quantum Phase Transitions](#) [#Condensed Matter Magnetism](#)

Delve into the fascinating world of Ruthenate and Rutheno Cuprate materials, known for their captivating unconventional superconductivity and intriguing magnetic properties. These materials serve as critical systems for exploring complex quantum phase transitions, offering deep insights into emergent phenomena in condensed matter physics.

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Ruthenate And Rutheno Cuprate Materials Unconventional Superconductivity Magnetism And Quantum Phase Transitions

Miguel M. Ugeda - Unconventional superconductivity in two-dimensional Van der Waals materials - Miguel M. Ugeda - Unconventional superconductivity in two-dimensional Van der Waals materials by IFIMAC-ICMM Joint Seminar Series 764 views Streamed 3 years ago 1 hour, 21 minutes - ... many body electronic **phases**, such as mod **phases magnetic**, order or even **quantum**, spin liquids in these **materials**, in the single ...

K. Efetov 05 - Antiferromagnetic states and phase transitions in Cuprates. - K. Efetov 05 - Antiferromagnetic states and phase transitions in Cuprates. by IPhT-TV 681 views 9 years ago 47 minutes - Quantum, criticality and high-temperature **superconductivity**, By Konstantin Efetov, IPhT, Chaire Blaise Pascal & Bochum U. 10 ...

Illuminating strongly correlated materials and unconventional superconductors - Illuminating strongly correlated materials and unconventional superconductors by Virtual Science Forum 395 views 1 year ago 41 minutes - by Fahad Mahmood.

Intro

Some key problems in strongly correlated physics

Multidimensional spectroscopies of correlated materials

THz 2D coherent spectroscopy

Electron (or Coulomb) glass Phosphorus doped silicon

Anderson insulator vs electron glass

Non-Fermi liquids/strange metals

Third order nonlinear response

2D THz spectroscopy of a Coulomb glass

Summary

What comes next? Detecting fractional excitations in complex magnetic insulators

Reminder: single electron ARPES

Double-ARPES on unconventional superconductors Theoretical formalism
Double-ARPES on d-wave superconductors
Double-ARPES on a FFLO phase
Double-ARPES -- experimental realization
Shameless plug Multidimensional spectroscopies of quantum materials
THz nonlinear response in cuprates Nonlinear response of overdoped LSCO
Wei-Sheng Lee: RIXS Studies on Charge Order Phenomena in Cuprate and Nickelate Superconductors - Wei-Sheng Lee: RIXS Studies on Charge Order Phenomena in Cuprate and Nickelate Superconductors by Center for Integrated Quantum Materials 599 views 1 year ago 50 minutes - This was taken after the TC so it's not in the surcoming **phase**, later I will show you the the data taken in the Superman **phase**, ...
High Temperature Superconductors Finally Understood - High Temperature Superconductors Finally Understood by Science Discussed 21,998 views 1 year ago 10 minutes, 24 seconds - A room-temperature **superconductor**, would completely **change**, electronics and now we finally understand what makes ...
Role of Pressure in Recent Superconductor Experiments
How Unconventional Superconductors Work
Mechanism for the Attractive Force between Electrons
Super Exchange
What Does this Mean for the Future of Material Fabrication
Andrea Cavalleri - Advances in Optically Driven Cuprate Superconductivity (April 11, 2023) - Andrea Cavalleri - Advances in Optically Driven Cuprate Superconductivity (April 11, 2023) by Simons Foundation 571 views 11 months ago 1 hour, 9 minutes - More details: <https://www.simonsfoundation.org/event/ccq-quantum,-cafe-with-andrea-cavalleri/>
The Physics of superconductors - The Physics of superconductors by Higgsino physics 447,974 views 5 years ago 8 minutes, 43 seconds - How a **superconductor**, works. Everything from the physics and some of the history as well. **Superconductors**, were discovered in ...
Introduction
What is conduction
Temperature and resistance
Superconductivity explanation
Meissner effect and applications
RCQM Symposium on Fe-based Superconductivity - Session V - RCQM Symposium on Fe-based Superconductivity - Session V by Rice Center for Quantum Materials 123 views 3 years ago 1 hour, 43 minutes - ... a **magnetic phase**, is suppressed typically ending in a pugetive **quantum**, critical point and eventually a **superconducting**, dome ...
Anna Böhmer - Iron-based superconductors: Materials, magnetism and tuning methods - Anna Böhmer - Iron-based superconductors: Materials, magnetism and tuning methods by IFIMAC-ICMM Joint Seminar Series 1,244 views Streamed 3 years ago 58 minutes - Second talk of the IFIMAC+ICMM Joint Seminar Series in 2021 presented by Anna Böhmer on the 21st of January, 2021.
Introduction
Order
Ironbased superconductors
magnetoelastic coupling
what can we understand
measuring superconductivity
sample length change
measurement setup
mixed phases
orthorhombic distortion
new phase
what comes first
Pneumatic susceptibility
Summary
Spin density wave
Nematic susceptibility
Parallel or antiparallel
Magnetic vortex
New superconductor

Magnetism

Empty phase diagram

Magnetic order

Summary of magnetism

Summary of materials

Spin vortex crystal

Quantum critical point

Pneumatic phase

How does superconductor work? demonstration and explanation with animation. - How does superconductor work? demonstration and explanation with animation. by budding scientist 29,191 views 4 years ago 2 minutes, 55 seconds - Superconductivity, was first discovered in 1911 when mercury was cooled to approximately 4 degrees Kelvin by Dutch physicist ...

What is Conductivity & Superconductivity as Fast as Possible - What is Conductivity & Superconductivity as Fast as Possible by Techquickie 172,304 views 9 years ago 3 minutes, 5 seconds - What actually causes the heat in your PC. How could we have a smaller, faster computer?

Superconductivity,! Credits: Hosting ...

The Incredible Potential of Superconductors - The Incredible Potential of Superconductors by Real Engineering 559,425 views 5 months ago 14 minutes, 8 seconds - Credits: Writer/Narrator: Brian McManus Writer: Josi Gold Editor: Dylan Hennessy Animator: Mike Ridolfi Animator: Eli Prenten ...

Intro

Superconductivity

Unconventional Superconductors

LK99

How do Superconductors work at the Quantum level? - How do Superconductors work at the Quantum level? by Arvin Ash 321,305 views 2 years ago 13 minutes, 50 seconds - 0:00 Onnes discovers "magic" 2:51 Meissner effect 4:05 What causes resistance 6:09 BCS Theory 8:11 Cooper pairs 9:11 ...

Onnes discovers "magic"

Meissner effect

What causes resistance

BCS Theory

Cooper pairs

Bose-Einstein condensate

First room temp superconductor

Maglev trains

Audible special offer

What's Up With Superconductors? With Neil deGrasse Tyson - What's Up With Superconductors? With Neil deGrasse Tyson by StarTalk 205,691 views 7 months ago 8 minutes, 29 seconds - What's up with **superconductivity**,? Neil deGrasse Tyson breaks down what **superconductivity**, means and how it could help **change**, ...

What is Conductivity?

What is Superconductivity?

How Can We Use Superconductors?

Can We Make A Room Temperature Superconductor?

Magnetic Fields & Supercolliders

How the BCS Theory of Superconductivity Works - Animated - How the BCS Theory of Superconductivity Works - Animated by Love to Learn 20,828 views 1 year ago 8 minutes, 30 seconds - We discuss how **superconductivity**, works and how a **superconductor**, can have a levitating **magnet**, above it. Specifically, we ...

Superconductivity - A Level Physics - Superconductivity - A Level Physics by DrPhysicsA 197,119 views 12 years ago 12 minutes, 50 seconds - A description of **superconductivity**, - in a little more detail than you need at A Level - to explain the basic concepts of a **quantum**, ...

Introduction

Superconductivity

Cooper pairs

Meissner effect

Quantum Vortices and Superconductivity + Drake Equation Challenge Answers - Quantum Vortices and Superconductivity + Drake Equation Challenge Answers by PBS Space Time 435,731 views 7 years ago 9 minutes, 3 seconds - Scientists studying **quantum**, vortices and their impact on

superconductivity, just won the Nobel Prize. Get your own Space Time ...

Alexandra Paramor

Edvin K

Peter Hallam

Cooper pairs | Electron Attraction in Superconductors - Cooper pairs | Electron Attraction in Superconductors by Core of Science 39,365 views 4 years ago 4 minutes, 41 seconds - Physics of **superconductivity**, and Cooper pairs. Animation of electrons motion in a **superconductor**,. Cooper pair formation.

Introduction

Superconductivity

Cooper pairs

Why

Quantum Physics in One Dimension: Charge Density Waves - Quantum Physics in One Dimension: Charge Density Waves by Xenosum 12,328 views 3 years ago 9 minutes, 24 seconds - Perturbation theory breaks down in one dimension. See how this can lead to charge density wave ordering.

References: Charge ...

Introduction

Quantum Mechanics

Diagonalization

Scanning tunneling microscopy

Nonlinearity

Conclusion

Dai Aoki (Tohoku University) "Multiple Superconducting Phases and Field-induced Phenomena in UTe₂" - Dai Aoki (Tohoku University) "Multiple Superconducting Phases and Field-induced Phenomena in UTe₂" by Rice Center for Quantum Materials 478 views 2 years ago 57 minutes - ABSTRACT: We present our recent results on heavy fermion paramagnet UTe₂ as a candidate for novel spin-triplet ...

Contents

Single transition in higher quality sample

The case for FM-SC

Multiple superconducting phase in UTe₂

Inverse magnetic susceptibility

Knight shift

The cuprate phase diagram: theory of the pseudogap metal, d-wave superconductivity, and charge order - The cuprate phase diagram: theory of the pseudogap metal, d-wave superconductivity, and charge order by Subir Sachdev 434 views 11 months ago 2 hours, 1 minute - Hong Kong University, March 15, 2023.

Steve Kivelson - Low energy physics of the cuprate high temperature superconductors - Steve Kivelson - Low energy physics of the cuprate high temperature superconductors by Israel Institute for Advanced Studies 5,282 views 7 years ago 1 hour, 27 minutes - Steve Kivelson (Stanford University) - Low energy physics of the **cuprate**, high temperature **superconductors**,.

Intro

Phase diagram

Temperature vs X

Bad metal regime

Conventional numbers

Why study cuprates

Other questions

High magnetic fields

Quantum critical points

Scaling

System at 0

Catherine Pépin, Charge order and Strange metals in cuprate superconductors - Catherine Pépin, Charge order and Strange metals in cuprate superconductors by HyperComplex Seminar 166 views 2 years ago 1 hour, 2 minutes - Catherine Pépin. Session D2: Physics of **superconducting materials**, Abstract. Charge orders and charge fluctuations have been ...

Physics of Cuprate Superconductors

Phase Diagram of the Cuprites

The Qcp under the Dome

Emergent Symmetry

Spin Flop Transition

Strange Metal

Plank and Regime for Resistivity

Memory Matrix

Roman Scattering

The pseudogap phase of the cuprate superconductors - The pseudogap phase of the cuprate superconductors by International Centre for Theoretical Sciences 3,203 views 9 years ago 58 minutes - Dates: Monday 12 Jan, 2015 - Friday 16 Jan, 2015 Description: Condensed matter systems display a wide variety of interesting ...

Harold Hwang "Superconductivity in infinite layer nickelates" - Harold Hwang "Superconductivity in infinite layer nickelates" by Stanford Physics 1,071 views 2 years ago 56 minutes - APPLIED PHYSICS/PHYSICS COLLOQUIUM (Technical difficulties at start, audio improves at 4:45) Tuesday, November 2, 2021 ...

Mutual Inductance

Cuprate Landscape

Magnetic Excitation Spectrum

Cuprate Phase Diagram

Locating the Missing Superconducting Electrons in the Overdoped Cuprates... , Peter Armitage - Locating the Missing Superconducting Electrons in the Overdoped Cuprates... , Peter Armitage by Kavli Institute for Theoretical Physics 270 views 3 years ago 48 minutes - "Locating the Missing **Superconducting**, Electrons in the Overdoped **Cuprates**, (and cyclotron resonance!)" This talk was recorded ...

Intro

The puzzle of the missing superconducting electrons in overdoped cuprates

Time Domain THz Spectroscopy

Residual and normal state real conductivity

Expectations for dirty d-wave

Radiation induced disorder/defects

Low-T uncondensed carrier conductivity

Superfluid phase stiffness

How does cyclotron resonance mass compare with ARPES?

Cyclotron resonance as a function of field

Steven Kivelson (Stanford) High-Tc superconductivity after 1/3 of 100 years @Harvard CMSA 12/17/2020 - Steven Kivelson (Stanford) High-Tc superconductivity after 1/3 of 100 years @Harvard CMSA 12/17/2020 by Juven Wang 3,328 views Streamed 3 years ago 1 hour, 52 minutes - 12/17/2020 Steven Kivelson (Stanford University) Title: What do we know about the essential physics of high-temperature ...

Intro

Keyboard shortcut

Welcome

What has been understood

Last words on the cuprates

State of the field paper

Antiferromagnetic insulator

Superconductivity

Unconventional superconductivity

Twostep normalization

Hubbard phase diagram

Discussion

Phase ordering determines Tc

Superfluid density

The boomerang effect

Tc vs superfluid density

Experimental facts

Phase diagram

Steven Kivelson | Superconductivity and Quantum Mechanics at the Macro-Scale - 2 of 2 - Steven Kivelson | Superconductivity and Quantum Mechanics at the Macro-Scale - 2 of 2 by Stanford Institute for Theoretical Physics 43,808 views 7 years ago 1 hour, 55 minutes - Professor Steven Kivelson

of the Stanford Institute for Theoretical Physics (SITP) introduces the physics of superconductivity and ...

The Search for Chiral Superconductors, covering Magnetism & Possible Weyl Superconductivity in UTe₂ - The Search for Chiral Superconductors, covering Magnetism & Possible Weyl Superconductivity in UTe₂ by Condensed Matter Physics In the City 967 views 2 years ago 1 hour, 27 minutes - Aharon Kapitulnik Department of Applied Physics, Stanford University Abstract: A Chiral **superconductor**, is an **unconventional**, ...

Experimental Search for Chiral Superconductors

Symmetry of pairs of identical electrons

Most general order parameter

Symmetries and Symmetry Breaking

The superconducting gap function

Topological Insulators and Superconductors

Types of Topological Superconductors

If Time Reversal Symmetry is Broken...

Light-waves and Time-Reversal Symmetry

Interaction of light with TRSB material

Theory of Kerr Effect in TRSB Superconductors

Estimate of size of Kerr effect at near-IR frequency

Searches for Broken Time Reversal Symmetry TRS

Measurements with Zero-Area Sagnac Magnetome

Simple Measurement: The itinerant ferromagnet SRL

Heavy Fermions in one slide

Hallmarks of heavy fermions

Some initial considerations

Preferred symmetry: E

Kerr effect measurements on UPI

A Ferromagnetic Quantum Critical Point?

More Kerr Data in zero-field

Studies of Kerr effect

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