

PHYSICS DEPARTMENT SEMINARS
(formerly Theoretical Physics Seminars)

- 18 Oct 1965 Dr **J M Charap** (QMC)
Report on the Oxford Conference on elementary particle physics
- 25 Oct 1965 Prof **M E Fisher** (King's)
A new approach to statistical mechanics
- 1 Nov 1965 Dr **J P Elliott** (Sussex)
Charge independent pairing correlations in nuclei
- 8 Nov 1965 Prof **A B Pippard** (Cambridge)
Conduction electrons in strong magnetic field
- 15 Nov 1965 Prof **R E Peierls** (Oxford)
Realistic forces and finite nuclei
- 22 Nov 1965 Dr **T W B Kibble** (Imperial)
Broken symmetries
- 29 Nov 1965 Prof **G Gamow** (Colorado and Cambridge)
Cosmological theories
- 6 Dec 1965 Prof **D Bohm** (Birkbeck)
Collective coordinates in phase space
- 13 Dec 1965 Dr **D J Rowe** (Harwell)
Time-dependent Hartree-Fock theory and vibrational models
- 17 Jan 1966 Prof **J M Ziman** (Bristol)
Band structure: the Greenian method and the t-matrix
- 24 Jan 1966 Dr **T P McLean** (Malvern)
Lasers and their radiation
- 31 Jan 1966 Prof **E J Squires** (Durham)
The bootstrap theory of elementary particles
- 7 Feb 1966 Prof **G Feldman** (Johns Hopkins and Imperial)
Current commutators and coupling constants
- 14 Feb 1966 Dr **W E Parry** (Oxford)
Momentum distribution in liquid helium
- 21 Feb 1966 Dr **O Penrose** (Imperial)
Inequalities for the ground state of an interacting Bose system
- 7 Mar 1966 Dr **P K Kabir** (Rutherford)
 μ -mesonic molecules
- 14 Mar 1966 Prof **L R B Elton** (Battersea)
Towards a realistic shell model potential
- 21 Mar 1966 Prof **I M Khalatnikov** (Moscow)
Stability of a lattice of vortices
- 2 May 1966 Dr **G H Burkhardt** (Birmingham)
High energy scattering on deuterons
- 9 May 1966 Prof **L M Falicov** (Chicago & Cambridge)
Theory of the de Haas-van Alphen effect
- 16 May 1966 Prof **H Jones** (Imperial)
Electrons in nearly periodic fields
- 23 May 1966 Dr **A M Lane** (Harwell)
A comprehensive theory of nuclear reactions
- 6 Jun 1966 Prof **P C Martin** (Harvard & Paris)
Microscopic theory of superfluidity

- 10 Oct 1966 Prof **P G de Gennes** (Paris)
Nuclear magnetic resonance in type II superconductors
- 17 Oct 1966 Prof **D J Thouless** (Birmingham)
Solid ^3He as an ideal Heisenberg anti-ferromagnet
- 24 Oct 1966 Dr **R F Streater** (Imperial)
Canonical quantisation
- 31 Oct 1966 Dr **A J Leggett** (Oxford)
Theory of a superfluid Fermi liquid
- 7 Nov 1966 Prof **E H Sondheimer** (Westfield)
Anisotropic electron scattering in metals
- 14 Nov 1966 Prof **L Castillejo** (Oxford and UCL)
Angular distribution in nuclear reactions
- 21 Nov 1966 Dr **S Doniach** (Imperial)
Spin fluctuations in Fermi liquids
- 28 Nov 1966 Dr **Hong-Mo Chan** (CERN)
High energy production processes
- 5 Dec 1966 Prof **R J Blin-Stoyle** (Sussex)
Nuclear β -decay: implications of partial conservation of axial current
- 12 Dec 1966 Prof **G H A Cole** (Hull)
Theory of liquids in equilibrium
- 16 Jan 1967 Prof **Sir Nevill Mott** (Cambridge)
The nature of wave functions of electrons in non-periodic lattices
- 23 Jan 1967 Dr **R J N Phillips** (Harwell)
Regge poles in high energy scattering
- 30 Jan 1967 Dr **M H Macfarlane** (Argonne & Oxford)
Quasi-particle approximations in the nuclear shell model
- 6 Feb 1967 Prof **S F Edwards** (Manchester)
Topological problems in statistical mechanics
- 13 Feb 1967 Dr **J G Taylor** (Oxford)
A survey of bootstrap methods in particle physics
- 20 Feb 1967 Prof **D Bohm** (Birkbeck)
Collective treatment of liquid helium
- 27 Feb 1967 Prof **M Baily** (Northwestern & Leeds)
Magnetic impurities: the Kondo effect
- 6 Mar 1967 Dr **T W B Kibble** (Imperial)
Effect of intense photon beams on electrons
- 13 Mar 1967 Dr **R B Stinchcombe** (Oxford)
Statistical mechanics of ferromagnetism
- 20 Mar 1967 Dr **P V Landshoff** (Cambridge)
Need identical particles be fermions or bosons?

16 Oct 1967 Prof **P T Matthews** (Imperial)
Covariant phase shift analysis and Regge poles

23 Oct 1967 Prof **P W Anderson** (Cambridge)
Ground state of a magnetic impurity in a metal

30 Oct 1967 Dr **L J Sham** (QMC)
The inhomogeneous electron gas

6 Nov 1967 Prof **M A Ruderman** (NYU & Imperial)
White dwarfs and elementary particle physics

13 Nov 1967 Prof **S Deser** (Brandeis & Paris)
High energy sum rules and current algebra

20 Nov 1967 Prof **R Orbach** (UCLA and Imperial)
Anomalous phonon life times in solids

27 Nov 1967 Prof **S A Bludman** (Pennsylvania & Imperial)
Non-leptonic weak interactions

4 Dec 1967 Dr **D M Brink** (Oxford)
Semi-classical approximations in scattering theory

11 Dec 1967 Prof **F A E Pirani** (King's)
Gravitational waves

18 Dec 1967 Prof **V L Ginzburg** (Moscow)
Some speculations on superconductivity and superfluidity

11 Jan 1968 Prof **G Heber** (Dresden)
Functional methods in field theory

22 Jan 1968 Prof **D Ruelle** (Paris)
Lattice systems and the Gibbs phase rule

29 Jan 1968 Dr **J S Bell** (CERN)
Kinds of commutator

5 Feb 1968 Dr **O Penrose** (Imperial)
Phase transitions at complex fugacities

12 Feb 1968 Prof **E P Wohlfarth** (Imperial)
Itinerant electrons and spin waves in metals

19 Feb 1968 Prof **E Leader** (Westfield)
Conspiracy, evasion and daughters

26 Feb 1968 Dr **B L Györfy** (QMC)
Wave-like propagation in non-linear optics

4 Mar 1968 Prof **S B Treiman** (Princeton & Cambridge)
Angular behaviour of scattering at high energies

11 Mar 1968 Prof **B Mottelson** (Copenhagen)
Pairing effects in nuclei

18 Mar 1968 Prof **H Fröhlich** (Liverpool)
Microscopic derivation of the equations of hydrodynamics

6 May 1968 Dr **K J Barnes** (Imperial)
Current algebra and form factors

13 May 1968 Dr **R J Elliott** (Oxford)
Interaction between spin waves

20 May 1968 Prof **R Penrose** (Birkbeck)
Twistors

27 May 1968 Prof **C A Coulson** (Oxford)
Commutator relations and the wave equation

- 14 Oct 1968 Prof **N H March** (Sheffield)
Asymptotic form of correlation functions in classical and quantum fluids
- 21 Oct 1968 Prof **J C Polkinghorne** (Cambridge)
Recent developments in Regge theory
- 28 Oct 1968 Prof **J S Chisholm** (Canterbury)
Padé approximants and their applications
- 4 Nov 1968 Dr **T W B Kibble** (Imperial)
Coherent states and infra-red divergences
- 11 Nov 1968 Dr **J L Beeby** (Harwell)
Theory of phonons in liquids
- 18 Nov 1968 Dr **H J Spencer** (Imperial)
Spin representations and quantum field theory
- 25 Nov 1968 Dr **W Götze** (Munich)
Dispersion theory of the Kondo effect
- 2 Dec 1968 Prof **J R Taylor** (Colorado & Imperial)
Must particles be bosons or fermions?
- 9 Dec 1968 Prof **S Engelsberg** (Massachusetts & Imperial)
Spin fluctuations in nearly magnetic systems
- 13 Jan 1969 Prof **F Calogero** (Rome)
Variable phase approach to potential scattering
- 20 Jan 1969 Dr **V Heine** (Cambridge)
Quantum theory of cohesion and structure of metals
- 27 Jan 1969 Prof **R E Cutkosky** (Carnegie & Cambridge)
Theory of analysis of scattering data
- 3 Feb 1969 Prof **R F Streater** (Bedford)
Symmetry breakdown and scattering in the Heisenberg ferromagnet
- 10 Feb 1969 Prof **M Wortis** (Illinois & Imperial)
Correlations and scaling in the 3-dimensional Ising model
- 17 Feb 1969 Dr **B Renner** (Cambridge)
Current algebra and chiral SU(3) symmetry
- 24 Feb 1969 Prof **G Lüders** (Göttingen)
Critical fields in superconductors
- 3 Mar 1969 Dr **K J Barnes** (Imperial)
Non-linear pion Lagrangians
- 10 Mar 1969 Dr **A Huber** (Birmingham)
Variational principles and stability in quantum statistical mechanics
- 17 Mar 1969 Prof **J S Blair** (Seattle & Surrey)
Proton isobaric analogue resonances
- 24 Mar 1969 Prof **D Amati** (Orsay)
Some remarks about duality
- 28 Apr 1969 Dr **R Delbourgo** (Imperial)
Renormalisation of non-linear Lagrangians
- 5 May 1969 Prof **G Feldman** (Johns Hopkins & Imperial)
Covariant angular momentum expansions
- 12 May 1969 Prof **Sir Rudolf Peierls** (Oxford)
Use and misuse of Green's function techniques in transport theory
- 19 May 1969 Prof **R A Ferrell** (Maryland & Paris)
Dynamical scaling of phase transitions

19 Oct 1970 Prof **E R Caianello** (Naples)
Self-consistent derivation of masses in field theory

26 Oct 1970 Dr **R B Stinchcombe** (Oxford)
Magnetic excitations

2 Nov 1970 Dr **R B Jones** (QMC)
A model of chiral symmetry breaking

9 Nov 1970 Prof **D J Thouless** (Birmingham)
Ising model with long range interactions

16 Nov 1970 Dr **A J Macfarlane** (Cambridge)
Field algebra and weak interactions

23 Nov 1970 Prof **W Harrison** (Stanford & Cambridge)
Generalisations of pseudo-potential methods

30 Nov 1970 Dr **C J Isham** (Imperial)
Spontaneous breaking of conformal symmetry

7 Dec 1970 Prof **A L Fetter** (Stanford & Cambridge)
Superfluid vortices

14 Dec 1970 Dr **M Marinaro** (Naples and QMC)
Renormalisation through analytic continuation

18 Jan 1971 Dr **A J Leggett** (Sussex)
Superfluidity in liquids and possibly in solids

25 Jan 1971 Dr **D I Olive** (Cambridge)
Veneziano models of hadron physics

1 Feb 1971 Dr **D M Edwards** (Imperial)
Spin waves in transition metals

8 Feb 1971 Dr **D M Brink** (Oxford)
The structure of light nuclei

15 Feb 1971 Dr **R Delbourgo** (Imperial)
Renormalisation of rational Lagrangians

22 Feb 1971 Prof **T Soda** (Tokyo)
Sum rules and their application to the problem of liquid helium

1 Mar 1971 Dr **C J Isham** (Imperial)
Quantum electrodynamics with gravity

8 Mar 1971 Dr **A Coniglio** (Naples and King's)
Universality and scaling laws

15 Mar 1971 Dr **J B Pendry** (Cambridge)
Electron correlations at metallic densities

22 Mar 1971 Prof **E C Zeeman** (Warwick)
Applications of catastrophe theory

26 Apr 1971 Prof **H Lehmann** (Hamburg)
Properties of superpropagators in non-polynomial Lagrangian field theories

3 May 1971 Dr **M Marinaro** (Naples & QMC)
Different kinds of condensation in boson systems

10 May 1971 Dr **Hong-Mo Chan** (CERN)
The decay pattern of high spin resonances

- 18 Oct 1971 Dr **B U Felderhof** (QMC)
Non-equilibrium statistical mechanics of one-dimensional binary systems
- 25 Oct 1971 Prof **C Møller** (Copenhagen)
Thermodynamic potentials in the theory of relativity
- 1 Nov 1971 Prof **L Radicati** (Pisa & Oxford)
Symmetry breaking in electromagnetic and weak interactions
- 8 Nov 1971 Prof **S Mandelstam** (Berkeley & Imperial)
Fermions in dual resonance models
- 15 Nov 1971 Prof **G V Chester** (Cornell & Sussex)
Wave functions for solid helium
- 22 Nov 1971 Prof **E Leader** (Westfield)
A new kinematic variable for high energy scattering
- 29 Nov 1971 Prof **M J Buckingham** (Western Australia & Cambridge)
Thermodynamics of critical phenomena
- 6 Dec 1971 Prof **S F Edwards** (Manchester)
Generalisations of the formalism of quantum mechanics, with applications to
disordered systems
- 17 Jan 1972 Prof **J K Percus** (NYU & MHMS)
The reduced density matrix approach
- 24 Jan 1972 Prof **J R Fulco** (Santa Barbara)
Unitary models of the Pomeron
- 31 Jan 1972 Prof **J C Polkinghorne** (Cambridge)
Deep inelastic scattering
- 14 Feb 1972 Prof **R F Streater** (Bedford)
Fermi particles associated with a two-dimensional boson field
- 21 Feb 1972 Prof **J G Taylor** (King's)
Recent developments in non-polynomial Lagrangians
- 28 Feb 1972 Dr **C J Isham** (Imperial)
Quantisation and gravity
- 6 Mar 1972 Dr **S Gaunt** (King's)
Scaling laws and the magnetic equation of state
- 13 Mar 1972 Prof **J Bernstein** (Stevens Institute & Oxford)
Symmetry principles in β -decay and second class currents
- 20 Mar 1972 Prof **P W Anderson** (Cambridge)
Theory of localisability: a new branch of many-body theory
- 24 Apr 1972 Prof **S Deser** (Brandeis & Paris)
Massless limit of massive electrodynamics
- 1 May 1972 Dr **Chan Hong-Mo** (Rutherford)
The many-body problem in strong interactions
- 8 May 1972 Prof **Sir Rudolf Peierls** (Oxford)
Phase transitions in 1, 2 and 3 dimensions
- 15 May 1972 Prof **F J Dyson** (Princeton)
Neutron capture levels and error-correcting codes
- 22 May 1972 Dr **R Delbourgo** (Imperial)
Renormalisation of a weak interaction model
- 5 Jun 1972 Dr **T P McLean** (Malvern)
Laser-modulated electrons

16 Oct 1972 Prof **J G Valatin** (QMC)
Some highlights of the Dirac Symposium

23 Oct 1972 Dr **A J Macfarlane** (Cambridge)
Symmetry predictions for inclusive reactions

30 Oct 1972 Dr **A J Leggett**
A new phase transition in liquid He³

6 Nov 1972 Prof **Elliott H Lieb** (MIT & Paris)
Thermodynamics of the two level laser model

13 Nov 1972 Dr **J C Taylor** (Oxford)
Unified theory of weak and electromagnetic interactions

20 Nov 1972 Prof **A Brooks Harris** (Pennsylvania & Oxford)
Spin waves in Heisenberg magnets

15 Jan 1973 Dr **D J Wallace** (Southampton)
Feynman graph methods in critical phenomena

22 Jan 1973 Prof **R Penrose** (Birkbeck)
Twistors and quantum electrodynamics

29 Jan 1973 Dr **S Simons** (QMC)
Reduced thermal conductivity of dielectrics

5 Feb 1973 Prof **T L Trueman** (Brookhaven & Oxford)
Short distance behaviour in a massive Thirring model

12 Feb 1973 Dr **J Goldstone** (Cambridge)
Quantum dynamics of the massless string

19 Feb 1973 Prof **N H March** (Imperial)
Concentration fluctuations in liquid metal alloys

5 Mar 1973 Prof **N G van Kampen** (Utrecht)
Linear response theory

12 Mar 1973 Prof **G Rickayzen** (Kent)
Superconductivity in one and two dimensions

19 Mar 1973 Dr **R B Jones** (QMC)
Baxter states and XY model

30 Apr 1973 Prof **H N V Temperley** (Swansea)
The Ising model and beyond

7 May 1973 Prof **T W B Kibble** (Imperial)
Spontaneously broken gauge theories and renormalisation

14 May 1973 Prof **P T Landsberg** (Southampton)
Some problems in relativistic statistical mechanics

21 May 1973 Dr **J Rae** (QMC)
Recent developments in Hamiltonian dynamics

4 Jun 1973 Dr **C J Isham** (Imperial)
Internal symmetry extensions of gravitational type Lagrangians

15 Oct 1973 Dr **L Peliti** (QMC & Rome)
Renormalisation group and equation of states near the critical point

22 Oct 1973 Prof **R F Streater** (Bedford)
Currents and fields in the Thirring model

29 Oct 1973 Prof **O Penrose** (Open University)
Phase transitions and correlation functions

5 Nov 1973 Prof **J R Taylor** (Imperial & Colorado)
A new look at Coulomb scattering

12 Nov 1973 Dr **J A Evans** (Sussex)
Quasi-particles and quasi-spin in nuclear structure

19 Nov 1973 Prof **P W Anderson** (Cambridge)
Anisotropic superfluidity in He³

26 Nov 1973 Dr **R Delbourgo** (Imperial)
Field theory in arbitrary dimension

3 Dec 1973 Prof **S F Edwards** (SRC)
Two-dimensional plasmas

10 Dec 1973 Dr **G G Ross** (Rutherford)
Ultraviolet behaviour of gauge theories

14 Jan 1974 Dr **R B Jones** (QMC)
New aspects of the Heisenberg chain

21 Jan 1974 Dr **D Sherrington** (Imperial)
Magnetism in alloys of transition metals

28 Jan 1974 Dr **Chan Hong-Mo** (Rutherford)
Inclusive reactions

4 Feb 1974 Dr **I J R Aitchison** (Oxford)
Scale invariance in quantum field theory

11 Feb 1974 Prof **J C Ward** (Macquarie & London)
Leptonic currents and the Dirac equation

18 Feb 1974 Dr **D B Abrams** (Oxford)
Some results on the XY model

4 Mar 1974 Dr **B L Györfy** (Bristol)
Band theory for random metallic alloys

11 Mar 1974 Prof **G S Guralnik** (Brown & Imperial)
Permanently bound quarks: new solutions to all field equations

18 Mar 1974 Dr **D M Capper** (Imperial)
Quantum gravity

29 Apr 1974 Dr **H Danskin** (Imperial)
Accidental symmetry and pseudo-Goldstone bosons

6 May 1974 Dr **C J Isham** (King's)
Two-tensor theories of gravity with internal symmetry numbers

13 May 1974 Dr **M F Sykes** (King's)
An elementary approach to random mixtures and percolation processes

20 May 1974 Prof **D J Thouless** (Birmingham)
Two-dimensional solids and superfluids

14 Oct 1974 Prof **G Feldman** (Johns Hopkins and Imperial)
Massive and massless spin-two mesons

21 Oct 1974 Prof **F A E Pirani** (King's)
The new style in analytical dynamics

28 Oct 1974 Dr **C H Llewellyn Smith** (Oxford)
A unified model for weak and electromagnetic interactions

4 Nov 1974 Prof **D J Bohm** (Birkbeck)
A new notion of order in physics

11 Nov 1974 Dr **Chan Hong-Mo** (Rutherford)
A unitary model for hadron collisions

18 Nov 1974 Dr **A J Leggett** (Sussex)
The new phases of liquid He³

25 Nov 1974 Dr **P V Landshoff** (Cambridge)
Scattering with large momentum transfer

2 Dec 1974 Dr **J M Kosterlitz** (Birmingham)
Renormalisation group and critical phenomena

9 Dec 1974 Dr **E R Pike** (Malvern)
Photon statistics and correlations

13 Jan 1975 Dr **R Delbourgo** (Imperial)
Super-symmetries

20 Jan 1975 Prof **R F Streater** (Bedford)
Markov fields and Feynman integrals in Euclidean space

27 Jan 1975 Prof **R McWeeny** (Sheffield)
The pseudo-potential concept, origin and applications

3 Feb 1975 Prof **R Loudon** (Essex)
Coherence and non-linear optics

10 Feb 1975 Dr **C J Isham** (King's)
Quantum gravity models with quantised matter

17 Feb 1975 Prof **H E Hall** (Manchester)
Is there a superfluid velocity in He³?

24 Feb 1975 Prof **J Callaway** (LSU and Imperial)
Theory of ferromagnetism in transition metals

3 Mar 1975 Prof **E Leader** (Westfield)
Theories of proton-proton scattering at very high energies

10 Mar 1975 Dr **R B Stinchcombe** (Oxford)
Disordered spin systems

17 Mar 1975 Prof **R J Baxter** (Canberra & Edinburgh)
Exactly soluble models in statistical mechanics

28 Apr 1975 Dr **H Osborn** (Cambridge)
Dynamical symmetries for particles

5 May 1975 Prof **J P Elliott** (Sussex)
A perturbation approach to nuclear structure

12 May 1975 Dr **A M Lane** (Harwell)
Some interesting problems in present day nuclear physics

19 May 1975 Prof **S F Edwards** (SRC)
The theory of spin glasses

2 Jun 1975 Prof **J M Blatt** (New South Wales)
A new transport phenomenon

- 13 Oct 1975 Dr **D J Wallace** (Southampton)
Renormalisation group methods on a lattice
- 20 Oct 1975 Prof **M J Moravcsik** (Oregon & Sussex)
What can we learn from polarisation experiments?
- 27 Oct 1975 Prof **C J Thompson** (Melbourne & Open University)
A classical theory of amorphous ferromagnets
- 3 Nov 1975 Dr **D Bailin** (Sussex)
Gauge theories of strong interactions
- 10 Nov 1975 Prof **O Penrose** (Open University)
Statistical mechanics of metastable states
- 17 Nov 1975 Dr **M V Berry** (Bristol)
Topologies of waves
- 24 Nov 1975 Dr **I G Halliday** (Imperial)
Solitons and the ergodic hypothesis
- 1 Dec 1975 Dr **M A Moore** (Sussex)
The possible phases of superfluid He³
- 8 Dec 1975 Prof **L Castillejo** (UCL)
A field theoretical view of dense nuclear matter
- 19 Jan 1976 Dr **P Candelas** (Oxford)
Particle production at black holes
- 26 Jan 1976 Prof **I C Percival** (QMC)
Semi-classical quantisation of bound states
- 2 Feb 1976 Dr **C J Isham** (King's)
Canonical quantum gravity
- 9 Feb 1976 Prof **R F Streater** (Bedford)
Linear and some non-linear solitons
- 23 Feb 1976 Dr **A J Leggett** (Sussex)
Recent developments in superfluid He³
- 1 Mar 1976 Prof **S Deser** (Brandeis & King's)
Duality properties of gauge fields
- 8 Mar 1976 Dr **D D Burgess** (Imperial)
Atoms in plasmas and potential applications of lasers
- 15 Mar 1976 Prof **B S DeWitt** (Austin & Oxford)
Quantum problems in curved space
- 3 May 1976 Dr **N Rivier** (Imperial)
Dynamics of the spin-boson model in solids
- 10 May 1976 Dr **J Gunson** (Birmingham)
Statistical mechanics of the two-dimensional Coulomb gas and the quantised
sine Gordon equation
- 17 May 1976 Dr **P Goddard** (Cambridge)
Solitons and strings
- 24 May 1976 Prof **R J Elliott** (Oxford)
Theory of excitations in disordered crystals

- 18 Oct 1976 Dr **C J Isham** (Imperial)
Solitons and pions
- 25 Oct 1976 Prof **L M Falicov** (Berkeley & Cambridge)
Transfer matrix techniques for studying binary alloys
- 1 Nov 1976 Prof **Sir Rudolf Peierls** (Oxford)
Momentum of light in a refractive medium (Why Minkowski and Abraham were wrong)
- 8 Nov 1976 Prof **D J Thouless** (Birmingham)
Critical behaviour of a type II superconductor in a magnetic field
- 15 Nov 1976 Dr **R J N Phillips** (Rutherford)
The production of charmed particles
- 17 Jan 1977 Dr **J M Kosterlitz** (Birmingham)
Phase transitions in two dimensions
- 24 Jan 1977 Prof **M F Atiyah** (Oxford)
Solitons
- 31 Jan 1977 Dr **P Goddard** (Cambridge)
Extended objects in field theory
- 14 Feb 1977 Prof **A Houghton** (Brown & Sussex)
Critical phenomena and approximate renormalisation group calculations
- 21 Feb 1977 Dr **P C W Davies** (King's)
Quantum stress tensors in curved space
- 28 Feb 1977 Prof **R C Arnold** (Argonne & Rutherford)
Weak and electromagnetic interactions generated by a spontaneous breakdown of strong interaction symmetries
- 7 Mar 1977 Prof **P Szekeres** (Adelaide & Oxford)
Fibre bundles and gauge theories
- 14 Mar 1977 Prof **M H L Pryce** (Vancouver & Sussex)
The universe as seen from beyond the event horizon of a black hole
- 2 May 1977 Prof **J Pati** (Maryland & Imperial)
Quarks and leptons
- 9 May 1977 Dr **D Sherrington** (Imperial)
Effects of strong spatial disorder in magnetism

17 Oct 1977 Prof **K J Barnes** (Southampton)
New elementary particle symmetries?

24 Oct 1977 Pro **Sir Brian Pippard** (Cambridge)
The superconductor-normal interface

31 Oct 1977 Prof **R H Dicke** (Princeton & Cambridge)
The enigma of solar oblateness

7 Nov 1977 Prof **M Azbel** (Tel Aviv)
A physical approach to the investigation of DNA and RNA sequences

14 Nov 1977 Prof **J G Taylor** (King's)
Quantising gravity

21 Nov 1977 Prof **J E Enderby** (Bristol)
Recent progress in the structure of liquids

28 Nov 1977 Dr **C J Isham** (Imperial)
Quantum field theory in a curved space-time

5 Dec 1977 Dr **N Rivier** (Imperial)
Possibility of type I and type II ferromagnetism and antiferromagnetism

12 Dec 1977 Prof **I C Percival** (QMC)
Recent developments in classical dynamics

16 Jan 1978 Prof **A M Green** (Helsinki & Sussex)
The N-N potential and isobars in nuclei

23 Jan 1978 Dr **L J Landau** (Bedford)
Phase transitions for classical lattice systems and quantum fields

30 Jan 1978 Prof **Sir Sam Edwards** (Cambridge)
The role of functional integrals in physics

6 Feb 1978 Dr **D Olive** (Imperial)
Solitons and gauge groups

13 Feb 1978 Prof **B Widom** (Cornell & Oxford)
???

27 Feb 1978 Dr **A D Yoffe** (Cambridge)
Electrons in one and two dimensional solids

6 Mar 1978 Dr **A J Leggett** (Sussex)
Possible macroscopic effects of the weak interaction

13 Mar 1978 Dr **G Gibbons** (Cambridge)
Gravitational instantons and the high temperature limit of general relativity

21 Apr 1978 Prof **R A Brandt** (NYU)
Monopoles

24 Apr 1978 Prof **R F Streater** (Bedford)
Bose-Fermi correspondence in two dimensions

25 Apr 1978 Prof **P van Nieuwenhuizen** (Stony Brook)
Supergravity: an introduction and some recent results

8 May 1978 Dr **R S Ward** (Oxford)
Self-dual solutions of the Einstein equations

22 May 1978 Dr **R Haydock** (Cambridge)
Electron localisation in weakly disordered systems

- 9 Oct 1978 Dr **P I P Kalmus** (QMC)
The 19th international conference on high energy physics in Tokyo
- 16 Oct 1978 Prof **C H Woo** (Maryland & Sussex)
Why quarks are confined
- 23 Oct 1978 Prof **F Janouch** (Stockholm)
Alpha decay calculations in the frame of nuclear field theory
- 30 Oct 1978 Prof **M Kléman** (Paris-Sud)
Principles of a classification of defects in physics of condensed matter
- 6 Nov 1978 Prof **N D Mermin** (Cornell & Sussex)
Superflow in helium three
- 8 Jan 1979 Dr **R W Tucker** (Lancaster)
An intrinsic approach to supergravity theories
- 15 Jan 1979 Prof **P Winternitz** (Montreal & Scalay)
On the reconstruction of nucleon-nucleon scattering amplitudes from experiments and possible violations of isospin invariance
- 22 Jan 1979 Dr **D S Gaunt** (King's)
Recent results for the Ising model
- 29 Jan 1979 Dr **M V Berry** (Bristol)
Scaling laws associated with catastrophe and diffractive regimes in random waves
- 5 Feb 1979 Dr **L Landau** (Bedford)
Critical geometries in classical statistical mechanics
- 12 Feb 1979 Dr **E J Hinch** (Cambridge)
Mechanical models of dilute polymer solutions in strong flows
- 19 Feb 1979 Prof **M A Moore** (Manchester)
Spin glasses
- 26 Feb 1979 Dr **J Rae** (Harwell)
Numerical simulation of gas and oil reservoirs
- 5 Mar 1979 Dr **D B Fairlie** (Durham)
Higgs' fields and the determination of the Weinberg angle
- 12 Mar 1979 Prof **J S R Chisolm** (Canterbury)
A gauge theory of electrons and monopoles
- 23 Apr 1979 Dr **M J Duff** (Imperial)
Self-duality and super-gravity
- 30 Apr 1979 Dr **B L Györfy** (Bristol)
Tunneling states in metallic glasses
- 14 May 1979 Prof **L O'Raiheartaigh** (Dublin IAS)
Algebraic structure of spontaneous symmetry breakdown
- 21 May 1979 Dr **J S Bell** (CERN)
Q²-duality in e⁺e⁻ annihilation in a potential model
- 4 Jun 1979 Prof **E Leader** (Westfield)
The remarkable discoveries at Argonne about nucleon-nucleon spin structure

15 Oct 1979 Prof **D J Wallace** (Edinburgh)
Field theories of surface fluctuations

22 Oct 1979 Prof **M A Ruderman** (Columbia)
A theory of pulsars

29 Oct 1979 Prof **F Calogero** (Rome & QMC)
Integrable many-body problems

5 Nov 1979 Dr **M A H MacCallum** (QMC)
What type of fire-work was the Big Bang?

12 Nov 1979 Dr **F E Close** (Rutherford)
QCD perturbation theory for confined quarks and gluons

26 Nov 1979 Dr **R Marshall** (Rutherford & DESY)
QCD jets from JADE

3 Dec 1979 Prof **V Heine** (Cambridge)
New developments in the magnetism of iron

10 Dec 1979 Dr **J S Dowker** (Manchester)
Quantum mechanics and topology

7 Jan 1980 Dr **J C Taylor** (Cambridge)
A counter example to the non-Abelian Bloch-Nordsieck conjecture

14 Jan 1980 Dr **P C W Davies** (King's)
Particle production in the Big Bang

21 Jan 1980 Dr **J M Irvine** (Manchester)
Neutron stars

28 Jan 1980 Dr **D Sherrington** (Imperial)
Magnons in the Heisenberg-Mattis random magnet

4 Feb 1980 Dr **D M Brink** (Oxford)
Heavy ion scattering

11 Feb 1980 Prof **Sir Brian Pippard** (Cambridge)
Electrons in orbit

25 Feb 1980 Prof **D B Lichtenberg** (Indiana & Oxford)
The nature of the potential between quarks

3 Mar 1980 Dr **P W Higgs** (Edinburgh)
Non-linear realisations of supersymmetry

21 Apr 1980 Dr **E Corrigan** (Durham)
Instantons and functional determinants

28 Apr 1980 Dr **R B Stinchcombe** (Oxford)
Scaling and cross-over in magnets

12 May 1980 Prof **O Penrose** (Open University)
Entropy in non-equilibrium systems

19 May 1980 Prof **T W B Kibble** (Imperial)
Geometrisation of quantum mechanics and non-linear generalisations

13 Oct 1980 Dr **I T Drummond** (Cambridge)
Thermal Green's functions in an expanding universe

20 Oct 1980 Dr **M R Hoare** (Bedford)
Boltzmann model, non-linear relaxations and collective gains

27 Oct 1980 Prof **D B Cline** (Madison)
Experiments to search for proton decay and a finite neutrino mass

3 Nov 1980 Prof **C Michael** (Liverpool)
Do we understand heavy quark bound states?

10 Nov 1980 Dr **D G Pettifor** (Imperial)
Heats of formation of transition metal alloys

17 Nov 1980 Dr **P G Williams** (Westfield)
Mesons, glueballs, anomalies and the U(1) problem

24 Nov 1980 Prof **P T Landsberg** (Southampton)
Some questions in relativistic thermodynamics

1 Dec 1980 Prof **R Delbourgo** (Hobart & Imperial)
The gauge technique

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