14th National Congress of the Australian Institute of Physics

Adelaide University, South Australia: December 10 — 15, 2000

Driving Technology Through Discovery, Understanding and Innovation

INDIVIDUAL CONFERENCE PROGRAM

VERSION 2
(Excludes plenary sessions)

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18TH AINSE NUCLEAR & PARTICLE PHYSICS CONFERENCE (AINSE/NUPP)

Monday, December 11, 2000

2:00pm — 3:30 pm VENUE: KERR GRANT Chairperson: Andrew Stuchbery

2:00 pm Dr Martin SEVIOR University of Melbourne
020 ***Exploring the standard model with the Belle Detector***

2:30 pm A/Prof Paul BARKER University of Auckland
021 Superallowed beta decays, V_{ud} and the CKM matrix: The case of $^{38}K^{m}$

2:50 pm Miss Jasna DRAGIC University of Melbourne
022 ***Thermal simulations of the new design for the Belle Silicon Vertex detector***

3:10 pm Mr Nick HASTINGS University of Melbourne
023 Determination of B^0B^0 mixing rate from the time evolution of dilepton events at the Y(4s)

4:00pm — 5:30 pm VENUE: KERR GRANT Chairperson: Bruce McKellar

4:00 pm Prof George DRACOULIS Australian National University
024 ***Trends in the spectroscopy of neutron-rich nuclei***

4:30 pm Dr Robert BARK Australian National University
025 ***Search for chiral bands in the A = 130 region***

4:50 pm Dr Glenn MOLONEY University of Melbourne
026 ***Investigations of chiral symmetry of the CHAOS detector***

5:10 pm Mr Jamie VARAS University of Sydney
027 ***Impact parameter estimation in heavy ion collisons***

Tuesday, December 12, 2000

11:00am — 12:30 pm VENUE: KERR GRANT Chairperson: Alan Baxter

11:00 am Dr Derek LEINWEBER Adelaide University
028 ***Quantum Monte Carlo studies in lattice gauge theory***

11:30 am Mr William DETMOLD University of Adelaide
029 ***Theoretical aspects of QCD at large quark density***

11:50 am Dr Aidan BYRNE Australian National University
030 ***Core excited states in trans-lead nuclei***

12:10 pm Mr Martyn ROBINSON Australian National University
031 ***Perturbed DCO measurements of g-factors in 180-184Pt***

2:00pm — 3:30 pm VENUE: KERR GRANT Chairperson: George Dracoulis

2:00 pm Dr Paul MANTICA Michigan State University
032 Low-energy structure of neutron-rich near the ***N*** **=** 40 subshell closure studied by beta declay

2:30 pm Mr Thomas MCGORAM Australian National University
033 ***Four-quasiparticle isomers and K-forbidden transitions in 176Lu***

2:50 pm Prof Robert DELBOURGO University of Tasmania
034 ***Electromagnetic and gravitational decay of the Higgs boson***

Tuesday, December 12, 2000

2:00pm — 3:30 pm **18TH AINSE NUCLEAR & PARTICLE PHYSICS CONFERENCE (AINSE/NUPP)**

3:10 pm Dr Michael WALKER Australian National University
035 ***Chiral symmetry breaking is permitted in supersymmetric QED***

4:00pm — 5:30 pm **VENUE: KERR GRANT** **Chairperson: Stuart Tovey**

4:00 pm Dr Brian ROBSON Australian National University
036 ***The fusion of heavy nuclei***

4:30 pm Dr Mahananda DASGUPTA Australian National University
037 ***Effect of breakup on near barrier fusion***

4:50 pm Mr Matt GARBUTT University of Melbourne
038 ***Constraining right-handed and scalar currents in the weak interaction***

5:10 pm Ms Gabrielle BRIGHT University of Melbourne
039 ***Bose-Einstein correlations in like and unlike-sign charged pion pairs***

Thursday, December 14, 2000

11:00am — 12:30 pm **VENUE: KERR GRANT** **Chairperson: Brian Robson**

11:00 am Dr Stuart TOVEY University of Melbourne
040 ***Neutrino oscillations search in the NOMAD experiment***

11:30 am Dr Kevin VARVELL University of Sydney
041 ***Coherent meson production in the NOMAD experiment***

11:50 am Mr Frederic BONNET University of Adelaide
042 ***Revealing nonperturbutive physics in Lattice QCD***

12:10 pm A/Prof Chris HAMER University of NSW
043 ***Quantum Monte Carlo methods in Hamiltonia lattice gauge theory***

2:00pm — 3:30 pm **VENUE: KERR GRANT** **Chairperson: Robert Delbourgo**

2:00 pm Dr Paul CODDINGTON Adelaide University
044 ***Cluster computing for the Lattice QCD simulations***

2:30 pm Dr Vadim GUZEY University of Adelaide
045 ***On the role of delta (1232) in DIS on polarized He-3 and the extraction of neutron spin structure function g1n (x,Q2)***

2:50 pm Miss Rachel BUTT Australian National University
046 ***The effect of target spin on fission fragment angular distributions***

3:10 pm Dr Reza HASHEMI-NEZHAD University of Sydney
047 ***Accelerator driven sub-critical nuclear assemblies; spallation neutron induced nuclear waste transmutation in lead and graphite neutron moderating environments***

4:00 pm — 5:30 pm **AINSE/NUPP POSTER SESSION**
VENUE: GAMES, LEVEL 5

TF 057 Dr Allan BAXTER Australian National University
Spectroscopy of 189Pb

TF 058 Mr Sundance BILSON-THOMPSON Adelaide University
Non-trivial self-dual gluon configurations in Lattice QCD

TF 059 Mr Frederic BONNET University of Adelaide
The quark propagator in a Covariant gauge

TF 060 Miss Rachel CHALLIS
A study of charms particles - recent results from NOMAD

TF 061 Dr John COSTELLA Mentone Grammar
The Thomas rotation

TF 062 Ms Joanne CULPEPPER University of Melbourne
Development of a metrology system for the forward module of the Atlas Silicon Tracking Detector

Thursday, December 14, 2000

4:00 pm — 5:30 pm **18TH AINSE NUCLEAR & PARTICLE PHYSICS CONFERENCE (AINSE/NUPP)**
AINSE/NUPP POSTER SESSION

TF 063 Mr William DETMOLD University of Adelaide
Extrapolation of Lattice moments of quark distribution fFunctions towards the chiral limit

TF 064 Mr Rohan DOWD University of Melbourne
Measurement of Decay Rate of B →_ K

TF 065 Prof George DRACOULIS Australian National University
Shape co-existence and octupole correlations in Pb-190

TF 066 Dr Tunay ERSEZ Australian Nuclear Science and Technology Organisation
Polarised neutron scattering and magnetic studies of rhombohedral La1-xSrxMnO3+s

TF 067 Dr Tunay ERSEZ Australian Nuclear Science and Technology Organisation
Polarised Neutron Scattering Developments at the Australian Nuclear Science and Technology Organisation

TF 068 Mr Craig EVERTON University of Melbourne
Determining the CKM parameter Vub from the inclusive decay of B-Ds+ Xu using the Belle detector at KEK, Japan

TF 069 Prof Victor FLAMBAUM University of New South Wales
Quantum Munchhausen effect: radiative corrections increase tunneling probability

TF 070 Prof Victor FLAMBAUM University of New South Wales
Atom made from charged elementary black hole

TF 071 Prof Victor FLAMBAUM University of New South Wales
Increase of entropy in chaotic many-body systems and "quantum computer"

TF 072 Ms Jacinda GINGES University of New South Wales
Time reversal violating nuclear polarizability and atomic electric dipole moment

TF 073 Dr Grant GORFINE University of Sydney
Production testing of silicon modules for the ATLAS experiment

TF 074 Dr Xin-Heng GUO University of Adelaide
Bethe-Salpeter equation for heavy baryons in the diquark picture

TF 075 Dr Alexander KALLONIATIS University of Adelaide
Domain-like structures in the QCD vacuum and meson properties

TF 076 Mr Waseem KAMLEH CSSM and University of Adelaide
Inexpensive cChirality on the lattice

TF 077 Mr Sandor KAZI University of Melbourne
Modelling of performance of the Atlas SCT detector

TF 078 Mr Nicholas KENT University of Melbourne
Investigation of the interaction nmNÆK0sm+m-X

TF 079 Dr Ayse KIZILERSU Adelaide University
Regulator free method to solve Schwinger-Dyson equations

TF 080 Dr Derek LEINWEBER Adelaide University
Nucleon resonance phenomenology from Lattice QCD

TF 081 Mr Antonio LIMOSANI University of Melbourne
Measuring the B+ [D f]K branching ratio

TF 082 Mr Mushtaq LOAN University of New South Wales
Scale parameters from the background field approach for improved lattice gauge actions

TF 083 Samina MASOOD Quiad-I-Azam University
Thermodynamics of stars

TF 084 Samina MASOOD Quiad-I-Azam University
Scattering cross sections at finite temperature and density

TF 085 Dr Ian MCARTHUR University of Western Australia
Kappa symmetry in coset superspaces

Thursday, December 14, 2000

4:00 pm — 5:30 pm **18TH AINSE NUCLEAR & PARTICLE PHYSICS CONFERENCE (AINSE/NUPP)**
AINSE/NUPP POSTER SESSION

TF 086 Prof Bruce MCKELLAR University of Melbourne.
Quantum chaos in the Heisenberg picture

TF 087 Dr Glenn MOLONEY University of Melbourne
Measurement sin(2f2) via BÆpp decays with the Belle detector

TF 088 Dr Bhaskar MUKHERJEE Australian Nuclear Science Technology Organisation
Radiological shielding calculations for high energy particle accelerators

TF 089 A/Prof Akhtar Abbas NAQVI King Fahd University of Petroleum and Minerals
DWBA analysis of 14N(d,a0)12C cross section data at Ed=0.9-1.2 MeV

TF 090 Dr Peter NORMAN Monash University
Super - Heavy Nuclei

TF 091 Prof Keith NUGENT University of Melbourne
Quantitative phase imaging with neutrons

TF 092 A/Prof Lawrence PEAK University of Sydney
Application of PIN photodiodes as radiation detectors

TF 093 A/Prof Lawrence PEAK University of Sydney
Fluctuation analysis in heavy ion collisions

TF 094 A/Prof Anatoly ROSENFELD University of Wollongong
A system for radiation damage monitoring on HEP accelorators

TF 095 A/Prof Anatoly ROSENFELD University of Wollongong
Mapping of synchrotron microplanar beams with micron spatial resolution using MOSFET detector

TF 096 Dr Andreas SCHREIBER University of Adelaide
The Feynman variational approach to relativistic quantum field theory

TF 097 Ms Tanja J SCHUCK The Australian National University
Experimental study of the fusion dynamics of 32,34S+A97Au with quasi elastic scattering

TF 098 Dr Martin SEVIOR University of Melbourne
Investigations of chiral symmetry of the chaos detector

TF 099 Dr Andrew STUCHBERRY Australian National University
Nuclear structure from measured gyromagnetic ratios in the mass 80 region

TF 100 Dr Andrew STUCHBERRY Australian National University
Gyromagnetic ratios and shell model calculations near semimagic nuclei; probing proton-neutron interactions

TF 101 Mr James SWANSSON Australian National University
How relativistic wave equations enlighten the Aharonov-casher Effect"

TF 102 Mr David TELLIS University of Adelaide
The topology of gauge fields

TF 103 Dr Kazuo TSUSHIMA University of Adelaide
Alternative to a quark gluon plasma to explain J/Psi suppression

TF 104 Mr Juan URIBASTERA Australian National University
Heavy ion ERD of oxy-nitride and nitride films with a position-sensitive gas ionization detector

TF 105 Mr Andrew WALTERS Flinders University of SA
Ion transport across a gas-liquid interface in xenon applications to double beta decay

TF 106 Dr David WEISSER Australian National University
Superconducting cavities for ANU Linac

TF 107 Mr Stewart WRIGHT University of Adelaide
Calculating the sigma commutator from lattice QCD

TF 108 Mr Ross YOUNG University of Adelaide
Fixing the low energy constants from the cloudy bag model

TF 109 Mr James ZANOTTI University of Adelaide
Novel fat-link fermion actions for Lattice QCD

Friday, December 15, 2000

11:00 am — 12:30 pm VENUE: KERR GRANT Chairperson: Tony Thomas

11:00 am Prof Geoffrey TAYLOR University of Melbourne
049 ***Status of the ATLAS experiment at CERN***

11:30 am Mr Aldo SAAVEDRA University of Sydney
050 ***The Australian assembly system for semiconductor ATLAS detector modules***

11:50 am Ms Annette BERRIMAN Australian National University
051 ***Entrance channel dependent fission probabilities in heavy-ion fusion-fission reactions***

12:10 pm Dr Anjali MUKHERJEE Australian National University
052 *Enhancement or suppression of fusion cross-sections around the barrier*

2:00 pm — 3:30 pm VENUE: KERR GRANT Chairperson: Lawrence Peak

2:00 pm A/Prof Anatoly ROSENFELD University of Wollongong
053 ***Development of a PET detector module incorporating a silicon photodiode array***

2:30 pm Ms Tessica WEYERS Australian National University
054 ***A detailed study of the pulse height deficit effect in gas ionisation detectors***

2:50 pm Mr Jesse CARLSSON University of Melbourne
055 ***Improved lattice Hamiltonians***

3:10 pm Mr Pradip DEB University of Melbourne
056 ***New results from a predictive microscopic model of P-nucleus scattering***

4:00pm — 5:30 pm VENUE: KERR GRANT Chairperson: Andrew Stuchbery

4:00 pm Dr Refaat EL-HAJJE University of New South Wales
057 ***The interdependence of fission fragment angular and mass distributions***

4:20 pm Dr Tibor KIBEDI Australian National University
058 ***HONEY - An array for Electron-Electron coincidence spectroscopy***

4:40 pm Mr Stewart WRIGHT University of Adelaide
059 ***Hadron masses from Lattice QCD***