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Abstracts



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ABSTRACTS

THE SIXTH ASIA PACIFIC PHYSICS

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GRIFFITH UNIVERSITY

NATHAN CAMPUS

NATHAN

BRISBANE, AUSTRALIA

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At the time of publication the information was correct but alterations and additions always occur so listen for daily announcements.

Gary Tuck
Program Editor

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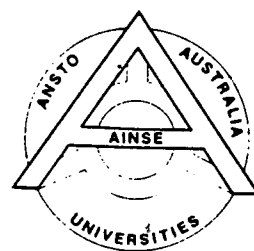
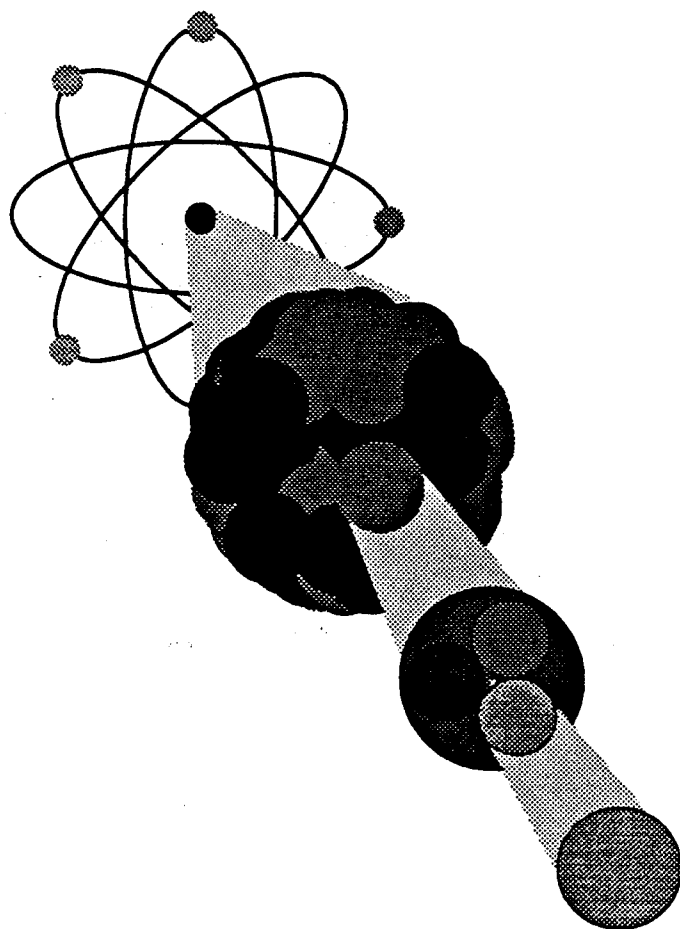
Nuclear and Particle Physics

The 15th AINSE Nuclear and Particle Physics Conference

at the 6th APPC and 11th AIP Congress

Griffith University, Brisbane

July 1994



PROGRAMME

MONDAY 4TH JULY 1994

TIME	PAPER NO.	
SESSION 1		CHAIR: Prof G Dracoulis (Australian National University)
2.00 - 2.45	1 (Invited)	POSITRON PRODUCTION IN HEAVY ION COLLISIONS - CURRENT STATUS OF THE PROBLEM. R R Betts (Argonne National Lab), for the APEX Collaboration.
2.45 - 3.15	2 (Invited)	BARRIERS IN FUSION - FINGERPRINTS OF NUCLEAR STRUCTURE IN NEAR-BARRIER REACTIONS. M Dasgupta <i>et al</i> (Australian National University).
3.15 - 3.30	3	SPATIAL PARITY AND TIME REVERSAL INVARIANCE VIOLATIONS AND QUANTUM CHAOS MANIFESTATIONS IN ATOMIC NUCLEI. O K Vorov (University of NSW).
3.30 - 4.00		AFTERNOON TEA
SESSION 2		CHAIR: Dr J Boldeman (ANSTO)
4.00 - 4.45	4 (Invited)	KEK RESEARCH FACILITIES AND THEIR ROLE IN THE ASIA-PACIFIC REGION. K Nakai (National Laboratory for High Energy Physics, Japan).
4.45 - 5.00	5	STUDIES ON THE ELECTRIC FIELD DISTRIBUTION IN SEMI-INSULATING GaAs AND ITS EFFECT ON DETECTOR PERFORMANCE. M L Williams (ANSTO and University of Sydney) and I J Donnelly (ANSTO).
5.00 - 5.30	6 (Invited)	SUPERCONDUCTING LINAC BOOSTER AT THE ANU - PROGRESS REPORT. D C Weisser (Australian National University).

TUESDAY 5TH JULY 1994

TIME	PAPER NO.	
SESSION 3		CHAIR: Dr L Tassie (Australian National University)
8.30 - 9.00	7 (Invited)	THE CREATION OF THE LIGHT ELEMENTS: COSMOLOGY AND COSMIC-RAYS. T Kajino (National Astronomical Observatory, Tokyo, Japan).
9.00 - 9.15	8	MASS NUMBER DEPENDENCES AND SEMI-CLASSICAL DESCRIPTIONS OF THE NUCLEAR PAIRING GAP. P Schuck (INS, Grenoble) and K Taruishi (Numazu College of Technology, Japan)
9.15 - 9.30	9	LOW ENERGY STRIPPING REACTIONS ON LIGHT NUCLEI. M H Hadizadeh, H Miri (Ferdowsi University of Mashhad, Iran), and H Afarideh (Atomic Energy Organisation of Iran).
9.30 - 9.45	10	POSITIVE PHOTOPION PRODUCTION FROM $^{12,13}\text{C}$ USING TAGGED PHOTONS. J C Kim <i>et al</i> (Seoul National University, Korea).
9.45 - 10.00	11	THE ENTROPY IN ULTRA-RELATIVISTIC HEAVY ION COLLISIONS. Li Panlin (Institute of Nuclear Research, Shanghai, China), Li Zhiliang (Shanghai University of Science and Technology, China) and Shi Xinhui (Qing Tao University, China).
10.00 - 10.30		MORNING TEA
SESSION 4		CHAIR: Dr L W Mitchell (Flinders University)
2.00 - 2.45	12 (Invited)	RADIOACTIVE NUCLEAR BEAMS. W Gelletly (University of Surrey, UK).
2.45 - 3.00	13	RESOLUTION OF ANOMALOUS FISSION ANISOTROPIES FOR THE REACTION OF $^{16}\text{O} + ^{208}\text{Pb}$. D J Hinde <i>et al</i> (Australian National University).
3.00 - 3.15	14	DETERMINATION OF THE QUADRUPOLE MOMENT OF THE PROTON $i_{13/2}$ ORBITAL. S Bayer, A P Byrne and G D Dracoulis (Australian National University).
3.15 - 3.30	15	SENSITIVITY OF QUASI-ELASTIC EXCITATION FUNCTIONS TO BARRIER DISTRIBUTIONS. H Timmers <i>et al</i> (Australian National University).
3.30 - 4.00		AFTERNOON TEA

TUESDAY 5TH JULY 1994

TIME	PAPER NO.	
SESSION 5		CHAIR: Prof A W Thomas (University of Adelaide)
4.00 - 4.45	16 (Invited)	PROPOSED EUROPEAN HIGH ENERGY ELECTRON LABORATORY Pierre Guichon (Saclay, France)
4.45 - 5.00	17	K ⁺ - NUCLEUS INTERACTIONS AT LOW MOMENTUM. K.Yamauchi, K Tamura and Y Sakamoto (Kyoto Sangyo University, Japan).
5.00 - 5.15	18	A SEARCH FOR SIGNATURES OF SCALAR TOP QUARK AT <i>ep</i> COLLIDER HERA - A CASE OF R-PARITY BREAKING COUPLING. Tadashi Kon (Seiki University, Japan), Tetsuro Kobayashi (Fukui Institute of Technology, Japan) and Shoichi Kitamura (Tokyo)
5.15 - 5.30	19	MEASUREMENT OF BACKGROUND NEUTRON FLUX AT A DEPTH OF 1230 m BELOW GROUND. S R Hashemi-Nezhad and L S Peak (University of Sydney).

WEDNESDAY 6TH JULY 1994

TIME	PAPER NO.	
SESSION 6		CHAIR: Dr B A Robson (Australian National University)
8.30 - 9.00	20 (Invited)	ASPECTS OF NUCLEAR FISSION. J P Lestone (Australian National University).
9.00 - 9.15	21	INELASTIC AND TRANSFER CHANNELS IN HEAVY-ION FUSION FOR ¹⁴⁴ Sm + ^{16,17} O. C R Morton <i>et al</i> (Australian National University).
9.15 - 9.30	22	BARRIER DISTRIBUTION FOR THE FUSION OF ¹⁶ O AND ⁹² Zr. J C Mein <i>et al</i> (Australian National University).
9.30 - 9.45	23	A STUDY OF ULTRA-RELATIVISTIC HEAVY ION COLLISIONS USING AN AUTOMATED VIDEO SCANNER SYSTEM. R Amirikas (University of Sydney) and EMU01 Collaboration.
9.45 - 10.00	24	SHAPE COEXISTENCE IN ¹⁸⁵ Tl AND ¹⁸⁷ Tl - INVESTIGATION OF THE DEFORMED MINIMA. G J Lane <i>et al</i> presented by A M Baxter (Australian National University).

WEDNESDAY 6TH JULY 1994

TIME	PAPER NO.	
SESSION 7		CHAIR: Dr J R Leigh (Australian National University)
2.00 - 2.45	25 (Invited)	NUCLEAR CLUSTERS B R Fulton (University of Birmingham, UK).
2.45 - 3.00	26	RESONANT STRUCTURES IN THE $^{16}\text{O} + ^{20}\text{Ne}$ SYSTEM. S C Li and B A Robson (Australian National University).
3.00 - 3.15	27	CHANNEL SELECTION IN HEAVY-ION REACTIONS BY CHARGED PARTICLE DETECTION. A P Byrne, G D Dracoulis and G J Lane (Australian National University).
3.15 - 3.30	28	FIRST OBSERVATION OF A $K^\pi = 8^-$ BAND FOR $N = 74$. P H Regan <i>et al</i> (Australian National University), A M Bruce (University of Brighton, UK) and P M Walker (University of Surrey, UK).
3.30 - 4.00		AFTERNOON TEA
SESSION 8		CHAIR: Dr L K Fifield (Australian National University)
4.00 - 4.30	29 (Invited)	CONFRONTING NUCLEAR STRUCTURE AND MAGNETIC MOMENTS. A E Stuchbery (Australian National University).
4.30 - 4.45	30	EVIDENCE FOR PRE-EQUILIBRIUM EFFECTS FOLLOWING IMPLANTATION OF Pt INTO Fe. S S Anderssen and A E Stuchbery (Australian National University).
4.45 - 5.00	31	EXAMINING SHAPE COEXISTENCE WITH A SIMPLE COLLECTIVE POTENTIAL. P M Davidson and G D Dracoulis (Australian National University).
5.00 - 5.15	32	HIGH SPIN STATES AND INTRINSIC STRUCTURE IN ^{176}Ta AND ^{176}Ta . F G Kondev <i>et al</i> (Australian National University).
5.15 - 5.30	33	MULTIPLETS AND COLLECTIVE STRUCTURES IN ^{202}Po . T Kibédi <i>et al</i> (Australian National University) and P M Walker (University of Surrey, UK).

THURSDAY 7TH JULY 1994

TIME	PAPER NO.	
SESSION 9		CHAIR: Dr W Woolcock (Australian National University)
8.30 - 9.00	34 (Invited)	KAON-NUCLEON SCATTERING AND KAON CONDENSATION. Chang-Hwan Lee and Dong-Pil Min (Seoul National University, Korea).
9.00 - 9.15	35	DYNAMICAL GENERATION OF THE SIGMA MODEL. R Delbourgo (University of Tasmania).
9.15 - 9.30	36	CHARGE SYMMETRY BREAKING IN THE NN INTERACTION FROM A QUARK-PION COUPLING MODEL. P E Schulz, G Q Liu and A W Thomas (University of Adelaide).
9.30 - 9.45	37	RHO-OMEGA MIXING. H B O'Connell, B C Pearce, A W Thomas and A G Williams (University of Adelaide).
9.45 - 10.00	38	TREATMENT OF MESON-NUCLEUS ELASTIC SCATTERING USING THE KDP FORMALISM B C Clark <i>et al</i> (Ohio State University)
10.00 - 10.30		MORNING TEA
SESSION 10		CHAIR: Dr I J Donnelly (ANSTO)
2.00 - 2.45	39 (Invited)	THE SUDBURY NEUTRINO OBSERVATORY. E B Norman (Lawrence Berkeley Laboratory, USA) for the SNO Collaboration.
2.45 - 3.15	40 (Invited)	SEARCH FOR NEUTRINO OSCILLATIONS. K E Varvell (ANSTO and University of Sydney).
3.15 - 3.30	41	INVISIBLE SUPERNOVA DIRECTION ESTIMATION. M Omori (University of Sydney).
3.30 - 4.00		AFTERNOON TEA

THURSDAY 7TH JULY 1994

TIME	PAPER NO.	
SESSION 11		CHAIR: Prof R Delbourgo (University of Tasmania)
4.00 - 4.30	42 (Invited)	QUARK-MESON COUPLING MODEL AND CHARGE SYMMETRY BREAKING IN NUCLEAR MATTER. K Saito (Tohoku College, Sendai, Japan and University of Adelaide).
4.30 - 4.45	43	PION EXCHANGE FORCE AND MESON VS QUARK DYNAMICS IN THE NUCLEON-NUCLEON INTERACTION. G Q Liu and A W Thomas (University of Adelaide).
4.45 - 5.00	44	WEAK DECAYS OF CHARMED AND BOTTOMED HADRONS AND HEAVY QUARK SYMMETRIES. Dongsheng Liu (University of Tasmania).
5.00 - 5.15	45	MODELLING DEUTERON PHOTODISINTEGRATION UP TO 200 MeV AND TESTING NUCLEON-NUCLEON POTENTIALS. W S Woolcock (Australian National University).
5.15 - 5.30	46	PION-NUCLEON SCATTERING REQUIRES A SOFT πNN FORM FACTOR. B C Pearce (University of Adelaide).

FRIDAY 8TH JULY 1994

TIME	PAPER NO.	
SESSION 12		CHAIR: Prof L S Peak (University of Sydney)
8.30 - 9.15	47 (Invited)	NEUTRINOS AND DARK MATTER FROM NUCLEAR SPECTROSCOPY. H. Ejiri (RCNP, Osaka, Japan).
9.15 - 9.30	48	ION TRANSPORT IN XENON GAS: APPLICATIONS TO DOUBLE BETA DECAY. T M Maddern and L W Mitchell (Flinders University).
9.30 - 9.45	49	ION TRANSPORT ACROSS A GAS-LIQUID INTERFACE IN XENON. L W Mitchell (Flinders University), M Miyajima and S Sasaki (KEK, Japan).
9.45 - 10.00	50	ON SPONTANEOUS BARYOGENESIS. S A Abel (Rutherford Appleton Laboratory, UK), W N Cottingham (Bristol, UK) and I B Whittingham (James Cook University).