



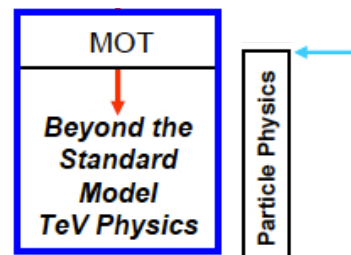
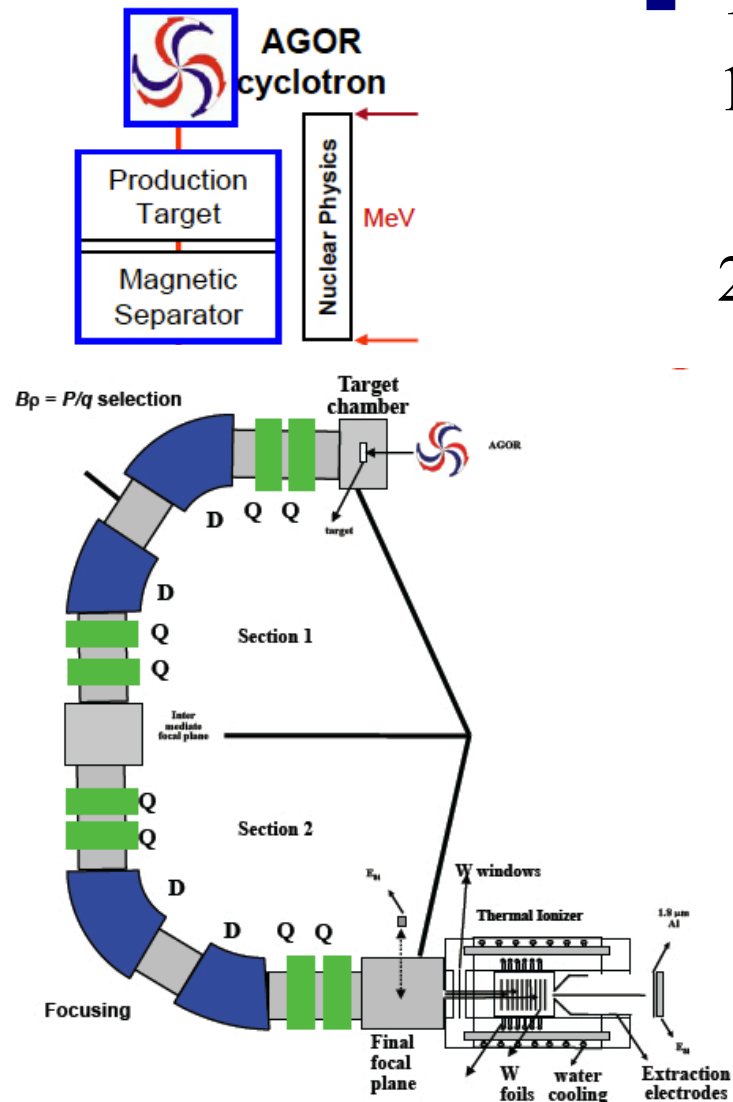
Report from KVI – PAC issues

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Research at KVI

- The research at KVI focuses mainly on
 - 1) fundamental forces and symmetries in physics
 - 2) applications of the technology and methods developed for fundamental research (in particular biology and medical applications)





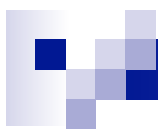
Types of new submitted proposals (I)

- Experiments to study fundamental interactions and symmetries at low q^2 (TRI μ P facility), 4 proposals:

- trapping and cooling of ions, atoms, and molecules. In particular search for violation of parity and time reversal symmetry

- high quality of proposals

- complementary to particle physics research (high q^2) to search for new physics beyond the Standard Model



Types of new submitted proposals (II)

- Experiments in nuclear (astro)physics, 2 proposals
 - high quality of proposals, use of existing facilities (e.g. BBS spectrometer), collaborations with strong European groups.

- Experiments to study biomedical physics, in particular in the field of particle therapy, 4 proposals
 - strong collaboration with the University (Clinics)
 - high quality of the medical physics proposals, which include very innovative approaches and collaborations with strong European groups.
 - specific commitment of the KVI Directorate to invest in biomedical applications, a decision that the PAC fully endorse and encourage.

Proposals submitted to PAC

Status reports

ID	Spokesperson	Title
T16	P. van Luijk	Radiation damage to parallel organized organs after high-precision proton irradiation
T27	P. van Luijk	Radiobiological effectiveness of ion irradiation in particle-based radiotherapy
S58	Zilges/Savran	Study of electric dipole strength below the particle threshold in $(p,p'\gamma)$ experiments

New proposals

ID	Spokesperson	Title
P15	M. Nunez Portela	Radium atomic parity violation: laser cooling of trapped Ra ions
P16	O. Versolato	Radiofrequency measurement of the $6^2D_{3/2}$ state hyperfine structure of trapped $^{213}\text{Ra}^+$ ions
P17	H. Wilschut	The beta-decay parameters of ^{39}Ca
P18	T. Hayamizu	Alternative method for Francium production and extraction
P19	G. Lotay	Study of the $^{26}\text{mAl}(d,p)^{27}\text{Al}^*$ transfer reaction in inverse kinematics: implications for the strengths of key astrophysical resonances in the $^{26}\text{mAl}(p,\gamma)^{27}\text{Si}$ reaction
T30	F. Fiedler	Experiments for real time in-vivo dosimetry for ion therapy
T31	V. Bom	Real time Bragg peak position monitoring with slit camera
T32	S. Brandenburg	Dosimetry standard for scanned beam protontherapy
T33	J van Abbema E. van der Graaf	Precision dose delivery in proton therapy
P20	O.S Kirsebom	Beta-delayed alpha-decay study of ^{16}N using implantation method



Criteria for approval

- Excellence is the sole criterion for approval

Overview of the used beam time

Overview of used AGOR beamtime					PAC 2010	2010	2011	@PAC 2011	
					approved	realized		realized	remaining
Experiment	Spokesp	Topic				[shifts]		total	
P05 (1)	H. Wilschut	Beta decay			54	12	13	25	29
P06 (1)	L. Willman	Method Radium isoto			27	6	0	6	21
P11 (1)	L. Willman	Search Elect dipole mom			27				27
P12 (1)	G. Onderwater	Lorenz invariantie exper			44	6	6	12	32
P13 (1)	O. Versolato	Atomic parity violation			54	47	0	47	7
P14 (2)	Young	Na en K decay			43				43
AGOR (1)	A. Sen	Accelerator Physics	mach time			10	17	27	
T16 (3)	P. v. Luijk	Radiobiology			9	8	4	12	
T23 (2)	C.Rigolet	EXL demonstrator	PAC2008			2		2	
T27 (3)	P. v Luijk	Radiobiology			12	6	2	8	4
T28 (2)	Marrocchi	Helium diffusivity			2	2		2	0
T29 (2)	Lohner	Radiation GSI contract			12	5	5	10	2
Irrad (2)	R. Ostendorf	Irradiation				29	19	48	
S58 (2)	Zylges	Electric dipole strenght			36				36
F18	Kistryn	Break-up deuteron-deuteron reactions					22	22	
				sum:	320	133	88	221	201

All experiments have taken data according to the schedule except two cases (delay of ~ 2 weeks)

New experiments approved at PAC2011

		tot	2011	beam
P15	M. Nunez Portela	48	12	206Pb
P16	O. Versolato	18	18	206Pb
P17	H. Wilschut	33	33	39K
P18	T. Hayamizu	16	16	Pb/Tl
→ P19	G. Lotay	12	12	26Mg
→ P20	O.S.Kirsebom	36	6	15N
→ T30	F. Fiedler	35	5	p
T31	V. Bom	2	2	p
T32	S. Brandenburg	30	3	p
T33	J van Abbema/ E. van der Graaf	16	4	p
	total	<u>246</u>	<u>111</u>	