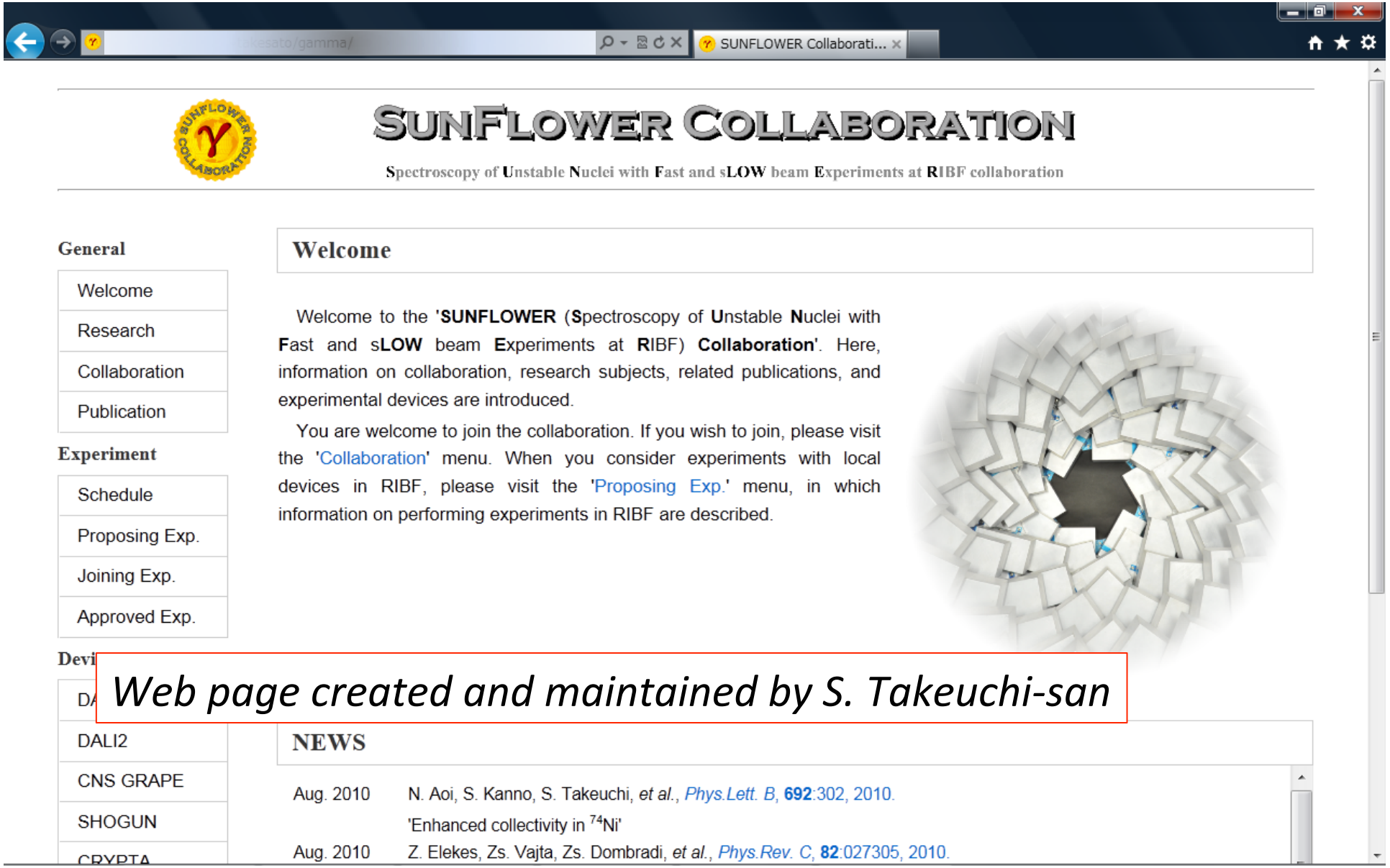
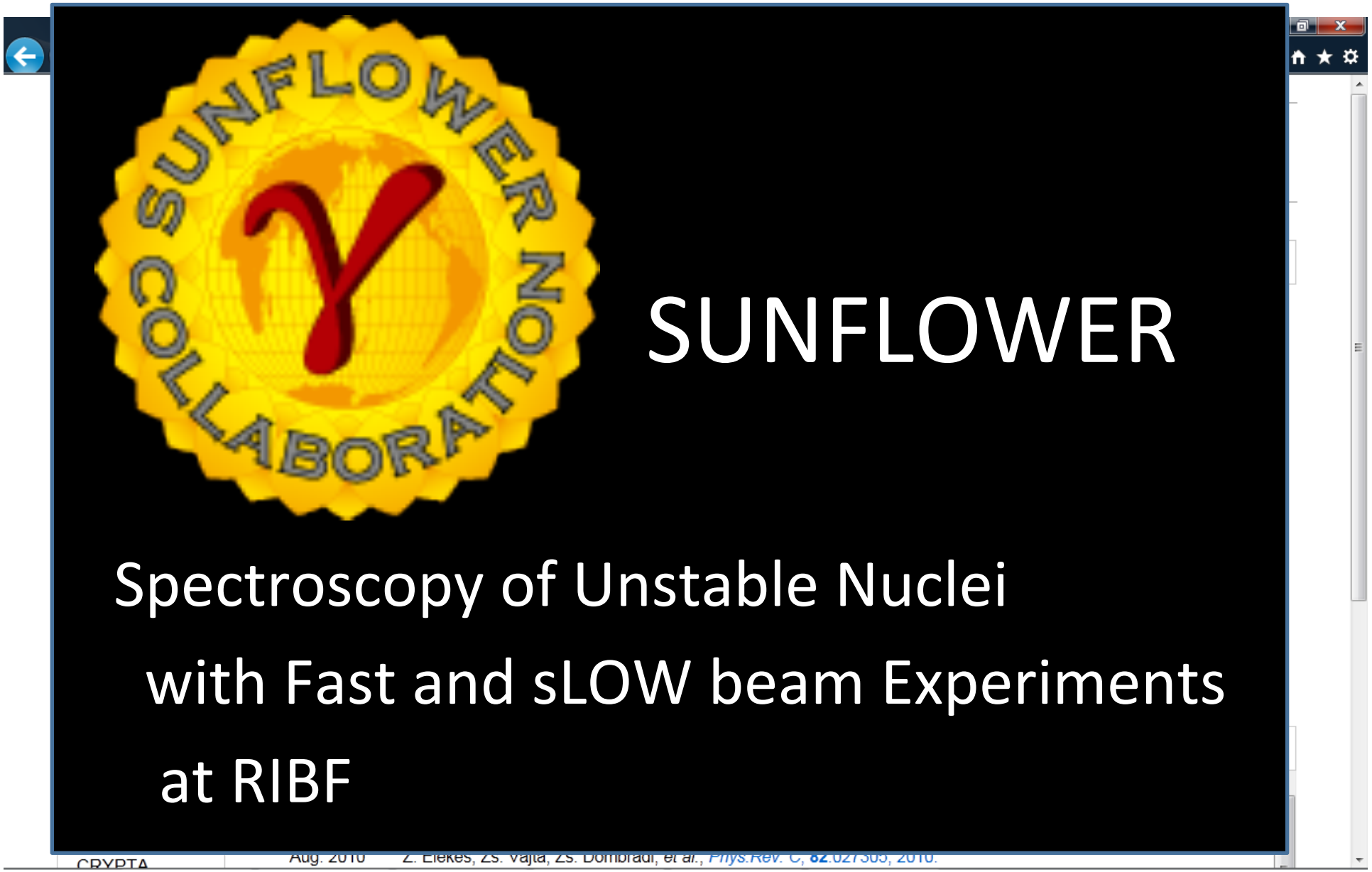
http://www.nishina.riken.jp/collaboration/SUNFLOWER/



Web page created and maintained by S. Takeuchi-san

http://www.nishina.riken.jp/collaboration/SUNFLOWER/



SUNFLOWER

Spectroscopy of Unstable Nuclei
with Fast and sLOW beam Experiments at RIBF

The SUNFLOWER collaboration is launched to enhance activities of the in-beam *γ*-ray spectroscopy at RI Beam Factory (RIBF).

SUNFLOWER stands for Spectroscopy of Unstable Nuclei with Fast and sLOW beam Experiments at RIBF”

and is a framework to coordinate researchers in the field of nuclear structure studies of unstable nuclei using fast and decelerated RI beams at RIBF by means of *γ*-ray measurements.

γ-detector array

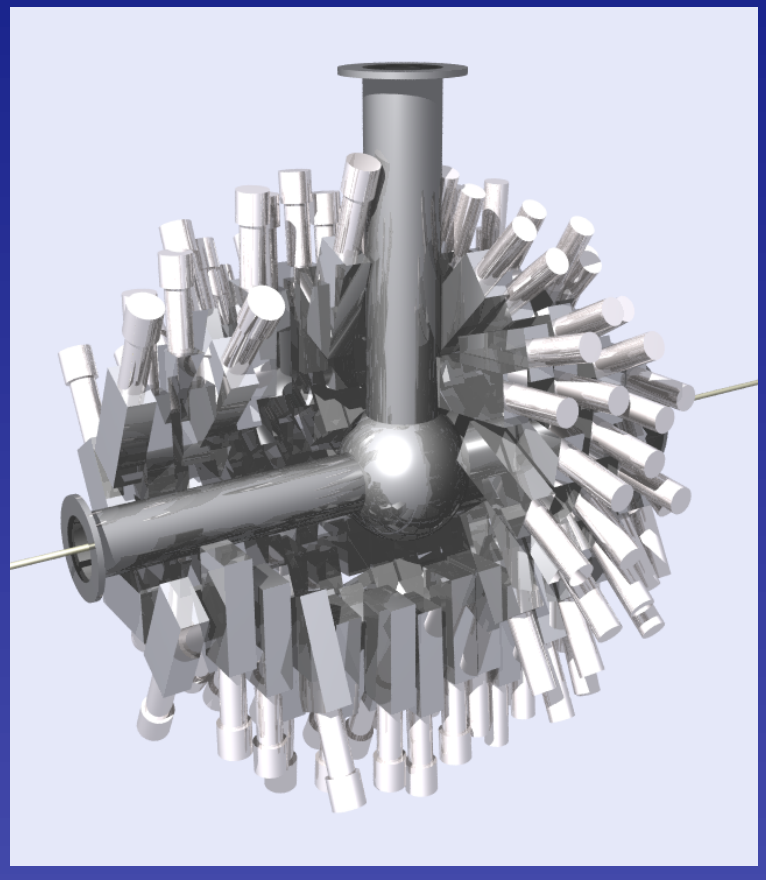
DALI2

160 NaI(Tl) detectors

Efficiency : 17% (FWHM)

E resolution: 150keV

(@ 1MeV, β~0.3)



GRAPE --- 18 Ge detectors

S. Shimoura, E. Ideguchi(CNS)

Efficiency	5%
Pos. resolution	2mm
E resolution	10keV

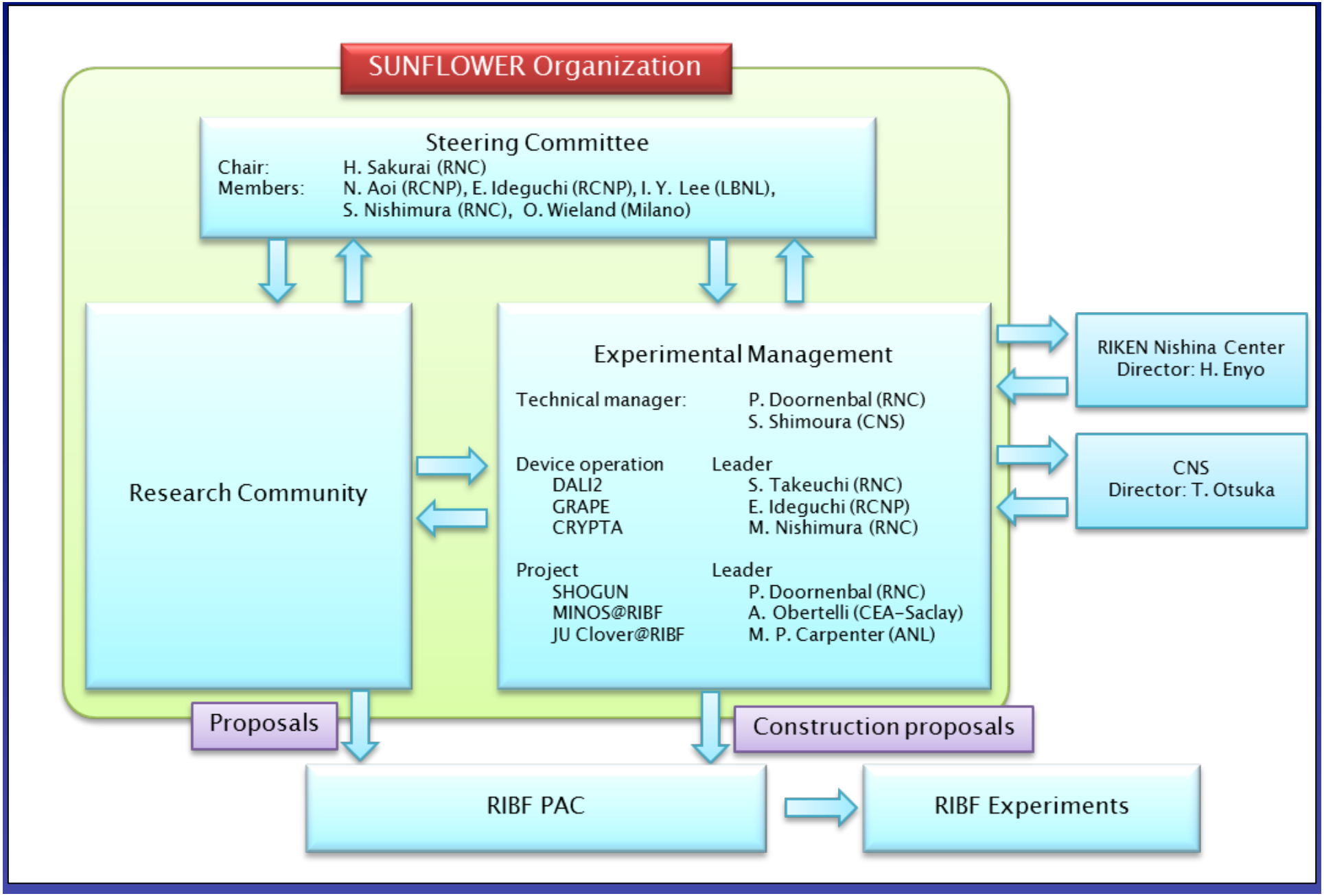
(@2.1MeV, β =0.3)

RCNP

I. *Function:*

1. The collaboration offers a forum for discussion and information exchanges. Proposals may be amended after consulting with SUNFLOWER members in advance of PAC meetings.
2. Arranges the tasks and resources necessary to accomplish experiments. The spokespersons of proposed experiments may ask members of SUNFLOWER to collaborate.
3. Provides technical information and consults regarding the utilization of non-standard detectors.
4. Coordinates research programs and equipment use. Arranges experimental campaigns. Mediates between conflicting experiments when similar subjects are proposed.
5. Discusses the strategy of detector developments.

II. Organization:



RCNP

II. Organization:

- The Steering Committee conducts the activities described above receiving technical support by the Experimental Management.
- The Experimental Management is in charge of operating existing devices and pursuing projects. The information on the devices and the project should be updated to allow for sharing among the SUNFLOWER members.
- The board members would be changed if necessary after discussion among the members. Election is considered. The items listed in the Device and Project will be added or removed in order to reflect reality.

RCNP

VII. Mailing lists:

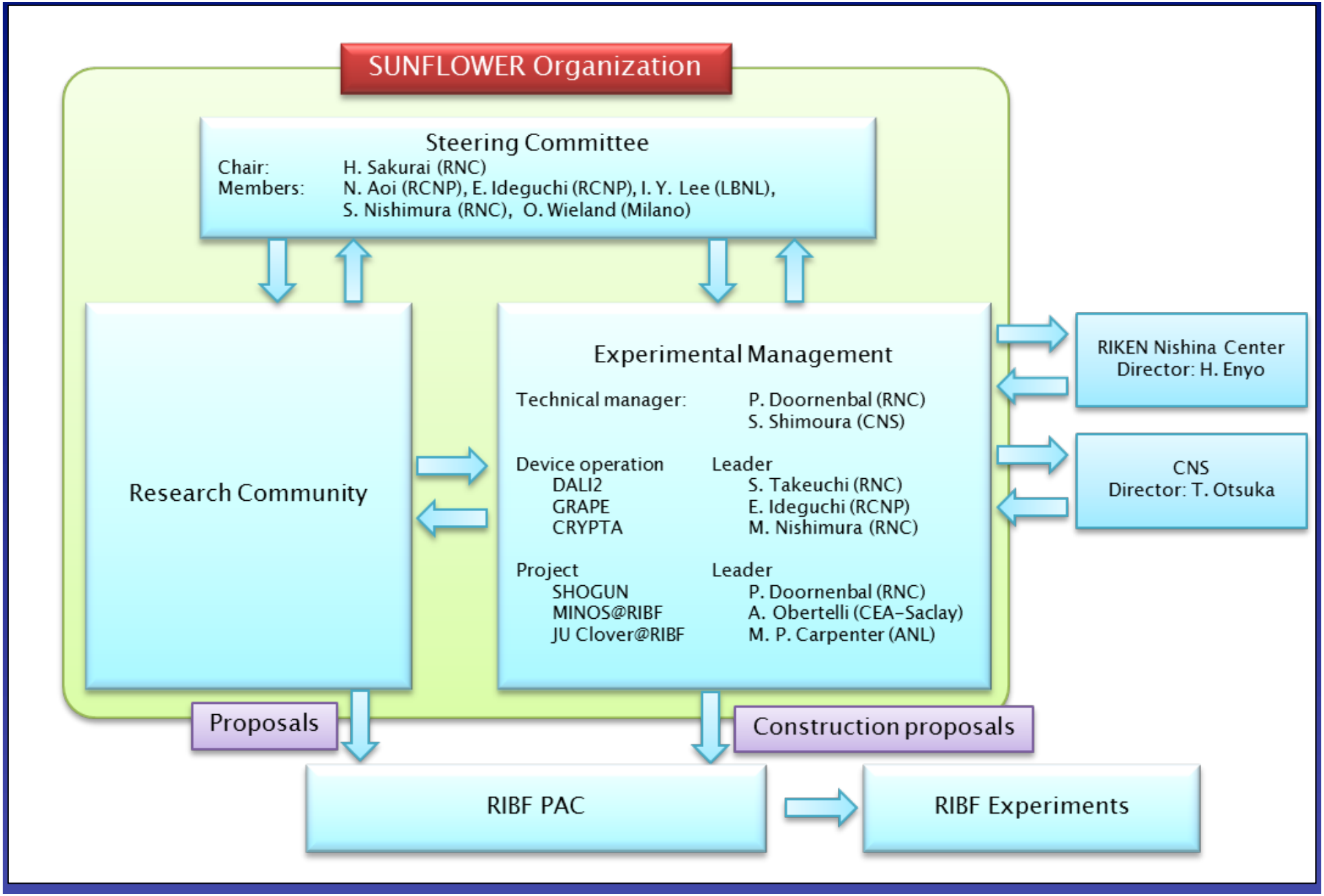
sunflower@ribf.riken.jp
: SUNFLOWER members

sunflower-contact@ribf.riken.jp
: Send any question or suggestion

sunflower-sc@ribf.riken.jp
: Steering Committee members

sunflower-em@ribf.riken.jp
: Experimental Management members

II. *Organization:*



RCNP

Discussion items

- Beam time assignment for the approved exp.
- Strategy for the future experiments
  - Choice of nuclear region
  - Choice of experimental approach
  - New experimental techniques
  - New observables
- Upgrade of DALI2/GRAPE
- Development of new detectors
- Problems to be solved as a collaboration
- Data sharing
- DALI2/GRAPE @ SHARAQ/SAMURAI

RCNP

DALI2 / GRAPE @ F8

Spokesperson	Institute	1st beam	Devices	Approved	Completed
W. Korten	CEA Scalay	^{78}Kr	DALI2	8 days	
G. De Angelis	INFN Legnaro	^{78}Kr	DALI2	5 days	
A. Corsi	CEA Saclay, IRFU, SPhN	^{238}U	GRAPE	5 days	
A. Obertelli	CEA Saclay	^{124}Xe	DALI2	2 days	
D. Steppenbeck	RIKEN	^{70}Zn	DALI2	3 days	
T. Aumann	TU Darmstadt	^{238}U	DALI2	8 days	
T. Bäck	Royal Inst.	^{238}U	GRAPE	(7) days	
O. Wieland	Milano	^{76}Ge	DALI2 + $LaBr_3$?	(8) days	
G. de Angelis	Legnaro	^{238}U	DALI2	11 days	
Z. Dombradi	ATOMKI	^{238}U	DALI2	(4) days	
T. Nakamura	TITech	^{48}Ca	DALI2 + mom.	3.5 days	
D. Steppenbeck	RIKEN	^{76}Ge	DALI2	5 days	
D. Bazin	NSCL	^{48}Ca	DALI2 + mom.	4 days	DONE
P. Fallon	LBNL	^{48}Ca	DALI2	3 days	1 day
E. Ideguchi	CNS	^{76}Ge	GRAPE + DALI2	4 days	
Z. Dombradi	ATOMKI	^{238}U	DALI2	3 days	
L. Trache	Texas A&M	^{20}Ne	DALI2 + mom.	3 days	
P. Doornenbal	RIKEN	^{124}Xe	DALI2	4 days	
T. Nakamura	TITech	^{48}Ca	DALI2	7 days	DONE
H. Baba	RIKEN	^{48}Ca	BaF_2 and BGO	10 days	
D. Sohler	ATOMKI	^{86}Kr	DALI2	4 days	
S. Takeuchi	RIKEN	^{48}Ca	DALI2	6 days	DONE
K. Yoneda	RIKEN	^{238}U	DALI2	10 days	DONE
N. Aoi	RIKEN	^{238}U	DALI2	10 days	3 days
H. Scheit	RIKEN	^{48}Ca	DALI2	10 days	3.5 days

RCNP

DALI2 @ SAMURAI/SHARAQ

Spokesperson	Institute	1st beam	Devices	Approved	Completed
H. Otsu	RNC	^{48}Ca	SAMURAI+DALI2	9.5 days	
T. Nakamura	TITech	^{18}O	SAMURAI+DALI2	6 days	
N.A. Orr	LPC-Caen	^{48}Ca	SAMURAI+DALI2	4 days	DONE?
T. Nakamura	TITech	^{48}Ca	SAMURAI+DALI2	8.5 days	DONE?
Y. Shimbara	Niigata	^{40}Ar	DALI2 + SHARAQ	(6) days	
S. Shimoura	CNS	^{18}O,^{15}N	DALI2 + SHARAQ	14 days	DONE
Y. Sasamoto	CNS	^{14}N	DALI2 + SHARAQ	6.5 days	DONE
S. Noji	Univ. of Tokyo	^{14}N	DALI2 + SHARAQ	6.5 days	DONE

RCNP

Discussion items

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RCNP

Project under SUNFLOWER

Ongoing

- SHOGUN (H. Scheit / P. Doornenbal)
- MINOS (A. Obertelli)
- US-Japan Clover Array (M. Carpenter)

Future

- $LaBr_3$ (O. Wieland)
- GRETINA (I.Y.Lee / E. Ideguchi)
- High energy gamma detector (H. Baba)
- …

RCNP

Discussion items

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- DALI2/GRAPE @ SHARAQ/SAMURAI

RCNP

III. *Membership:*

Anyone who is interested in the research

of nuclear structure and

reaction of unstable nuclei can join the SUNFLOEWR collaboration.

Please visit SUNFLOWER webpage !!