Japan and Europe Network for Neutrino and Intensity Frontier Experimental Research

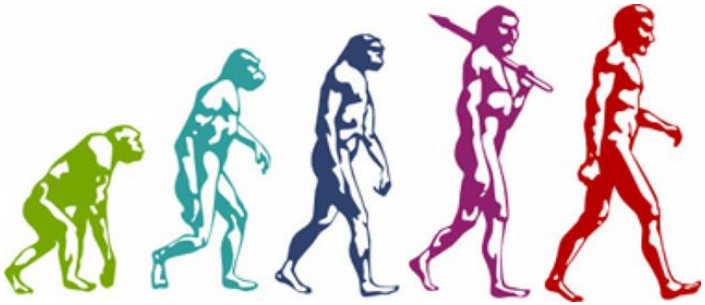
JENNIFER 2

EU grant n.822070

Kickoff Meeting

Vienna, September 12th-13th 2019

Evolution of the ~~species~~ project



JENNIFER
EU grant n.644294

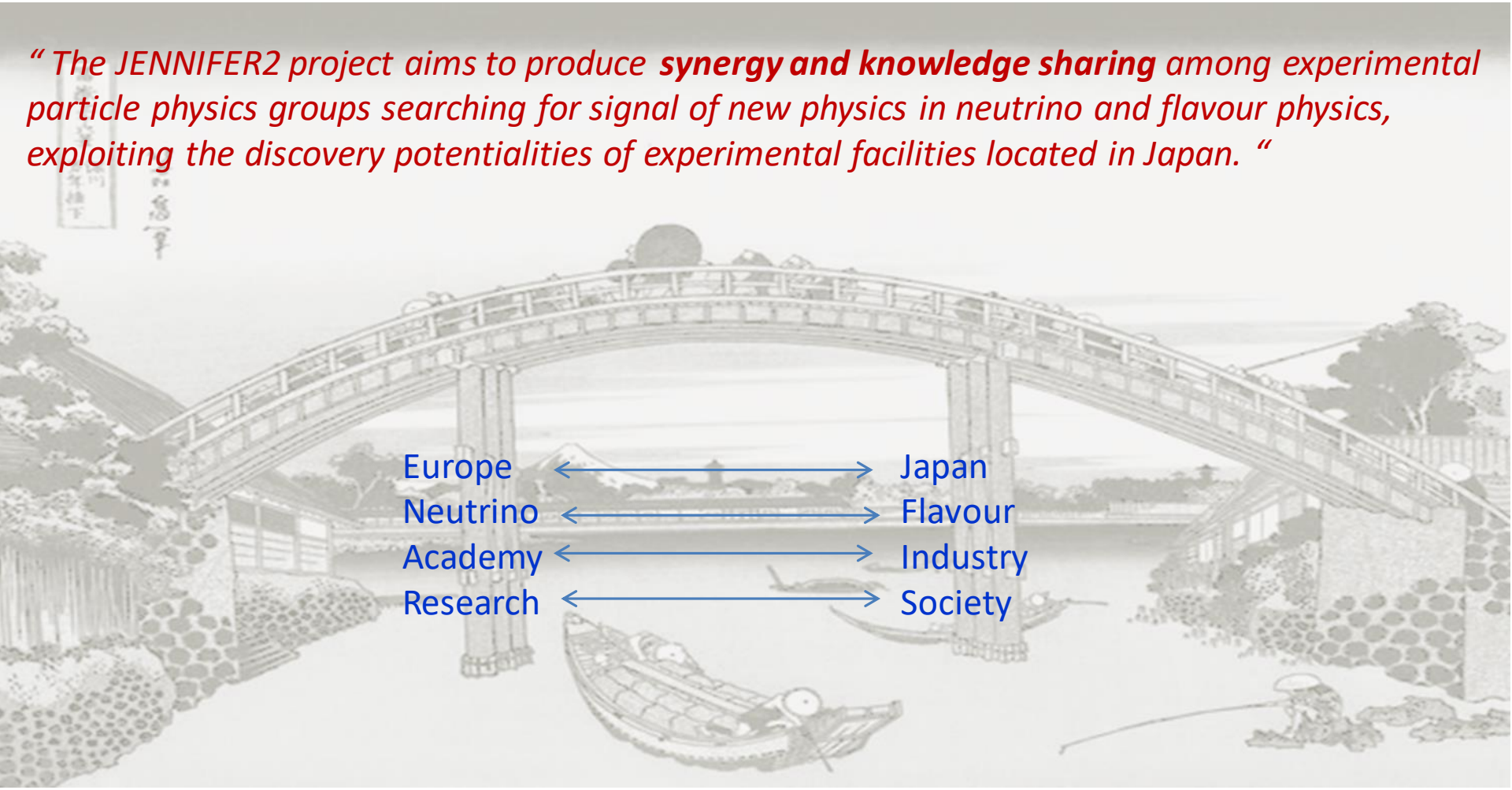
JENNIFER²
EU grant n.822070

5 Work Packages
Belle II and Neutrino parallel activities
13 academic + 1 industrial beneficiaries
2 Japanese partners
513 secondment months
2.3 M€ budget
> 200 researchers

7 Work Packages
Some Belle II and Neutrino joint tasks
15 academic + 2 industrial beneficiaries
2 Japanese partners
533 secondment months
2.45 M€ budget
> 200 researchers

…but keeping the same mission:

*" The JENNIFER2 project aims to produce **synergy and knowledge sharing** among experimental particle physics groups searching for signal of new physics in neutrino and flavour physics, exploiting the discovery potentialities of experimental facilities located in Japan. "*



Marie Slodowska Curie – Research and Innovation Staff Exchange

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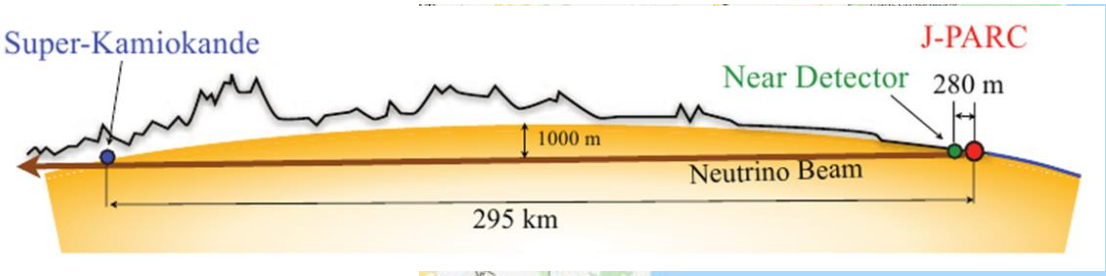
JENNIFER network is spread over all Europe !

WELCOME to new JENNIFER2 members:

- Université de Genève
- Tel Aviv University
- Fondazione Bruno Kessler

JENNIFER beloved Japanese Partners:

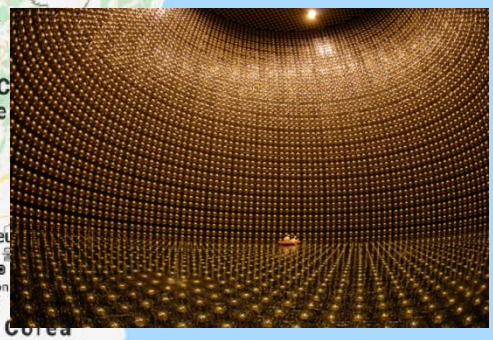


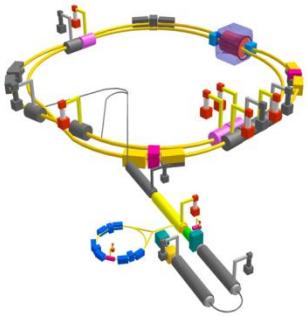
KEK

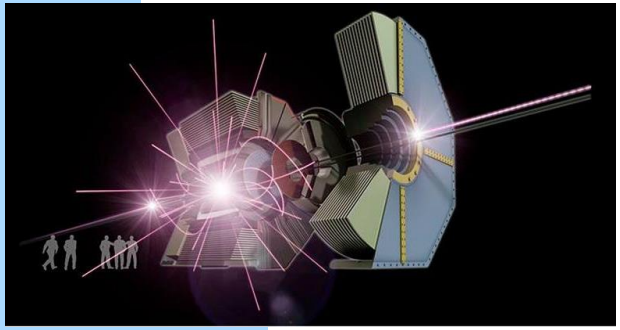
Unravelling the mysteries of matter, life and the universe.

KAMIOKA OBSERVATORY

東京大学 THE UNIVERSITY OF TOKYO







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JENNIFER2 structure

	Person months:
WP1: Belle II data analysis.	**220**
WP2: T2K upgrade and data analysis.	**138**
WP3: Towards HyperK.	**85**
WP4: Photodetectors R&D.	**34**
WP5: Computing and common techniques.	**56**
WP6: Communication and outreach	**0**
WP7: Management	**0**

Total: 533 p.m.

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JENNIFER2 Budget

Beneficiary	grant amount from GA	number of person months
INFN	€ 731.400,00	159
DESY	€ 372.600,00	81
OEAW	€ 101.200,00	22
JSI	€ 128.800,00	28
CNRS	€ 184.000,00	40
CEA	€ 96.600,00	21
QMUL	€ 207.000,00	45
UKRI	€ 151.800,00	33
UKP	€ 41.400,00	9
IFJ PAN	€ 82.800,00	18
NCBJ	€ 115.000,00	25
TAU	€ 27.600,00	6
METU	€ 27.600,00	6
UNIGE	€ 110.400,00	24
IFAE	€ 55.200,00	12
FBK	€ 4.600,00	1
CAEN	€ 13.800,00	3
Total	€ 2.451.800,00	€ 533,00

What are we doing here today?

- Review together the project activity plan and check whether milestones and deliverables are realistic ones
- Carefully discuss and plan all neutrino-flavour joint tasks
- Review the management and accounting details of the project
- Meet our project officer Amanda-Jane Ozin Hofsaess and enlight EU requirements and project timeline

Work Package 1 (C.Schwanda)

Belle II

Task 1.1: Detector performance (G.Finocchiaro, C.Marinas)

Task 1.2: CP violation (C.Schwanda, F. Bernlochner)

Task 1.3: LFV (G. De Nardo, F. Bernlochner)

Task 1.4: Dark sector (E.Graziani, G.Inguglia)

Task 1.5: Quarkonium (R.Mussa, M.Bracko)

Deliverables

D1.1	Publication on detector Performance	1 - INFN	Report	Public	48
D1.2	Publication on CPV	3 - OEAW	Report	Public	48
D1.3	Publication on LFV and LFUV	2 - DESY	Report	Public	48
D1.4	Publication on dark sector	3 - OEAW	Report	Public	48
D1.5	Publication on Spectroscopy	4 - JSI	Report	Public	48

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WP1 challenges

Produce talks (by march 2021) and publications (by march 2023) on all the tasks!

Critically depending on SuperKEKB performances and BELLE II efficiency

WP1 Milestones

1.1	Report on detector performance	1	INFN	24	Document
1.2	Conference Presentation on CPV	1	HEPHY	24	PublicTalk
1.3	Conference Presentation on LFV and LFUV search	1	DESY	24	PublicTalk
1.4	Conference Presentation on dark sector search	1	HEPHY	24	Public Talk
1.5	Conference Presentation on Spectroscopy	1	JSI	24	Public Talk

Work Package 2 (E.Radicioni)

T2K

Task 2.1: Construction and Commissioning of Near Detector ND280 (T.Lux, A.Delbart)

Task 2.2: Construction and Commissioning of Super FGD (E.Noah Messomo)

Task 2.3: Neutrino cross section measurement (F.Sanchez, A.Longhin)

Task 2.4: Oscillation analysis (C.Giganti, L.Ludovici, J.Lagoda)

Deliverables

D2.1	Paper on the upgraded ND280	1 - INFN	Report	Public	48
D2.2	Report on neutrino cross section on Carbon and Oxygen	15 - IFAE	Report	Public	48
D2.3	Report on electron neutrino cross section	1 - INFN	Report	Public	48
D2.4	Report on CP violation phase sensitivity	5 - CNRS	Report	Public	48

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WP2 challenges

To actually build new detectors!

Prototype expected by march 2021. Paper by march 2023

WP2 Milestones

2.1	Production and test of ND280 prototypes	2	INFN	24	Prototype
2.2	Improved acceptance for cross section	2	IFAE	24	Internal Report
2.3	Off axis neutrino energy reconstruction	2	INFN	36	Internal Report
2.4	Inclusion of multi-ring topologies	2	CNRS	24	Internal Report

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WP3 (F.Di Lodovico)

HyperK

Task 3.1: Gadolinium doped WC study (V.Berardi)

Task 3.2: WC calibration system (N.McCauley, L.Thompson, G.Collazuol)

Task 3.3: HK outer detector design (S.Zoldos, S.Playfer)

Task 3.4: Low noise FE for large area PMTs (A.Bravar, A.Rychter)

Task 3.5: HK simulation (T. Dealtry)

Deliverables

D3.1	Decision on UV system to measure Gd concentration	8 - UKRI	Report	Confidential, only for members of the consortium (including the Commission Services)	30
D3.2	Technical note on Outer Detector	7 - QMUL	Report	Public	36
D3.3	Final report on low noise front end electronics	14 - UNIGE	Report	Public	48
D3.4	Full simulation and analysis with final photosensors	7 - QMUL	Report	Confidential, only for members of the consortium (including the Commission Services)	48

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WP3 challenges

Complete a number of R&Ds with different technologies

Start taking some tecnical decision for the final experiment.

Only one milestone for WP3

3.1	Report on waveform digitizers	3	UGE	30	Internal Report

WP4 (R.Pestotnik)

Photodetectors

Task 4.1: SiPM in neutron irradiated areas (R.Pestotnik) + FBK

Task 4.2: Long lived MicroChannelPlate PMTs (E.Torassa)

Task 4.3: Multi PMTs for large WC detector (E.Berardi, HyperK)

Task 4.4: Organic photosensors R&D (A.Aloisio, P.Branchini. Collaboration with KEK and NIMS)

Deliverables

D4.1	Training pn photodetectors at NDIP	4 - JSI	Other	Public	18
D4.2	Report on MCP-PMT lifetime optimization	1 - INFN	Report	Public	24
D4.3	Realization of a mPMT prototype module	1 - INFN	Demonstrator	Public	24
D4.4	Report on SIPM prototype tests as single photon counters	4 - JSI	Report	Public	35
D4.5	Resport on organic photodetectors	1 - INFN	Report	Confidential, only for members of the consortium (including the Commission Services)	48

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WP5 (S.Bolognesi, Saclay)

Common

Each task has 2 convenors: one from Belle II and one from the neutrino community

Task 5.1: Common Computing and data handling (S.Pardi, S. King)

Task 5.2: Common DAQ and remote controls issues (S.Lange, B.Richards)

Task 5.3: Statistical methods for analysis combination (D.Tonelli, S.Bolognesi)

Task 5.4: Generators and phenomenology (E.Kou, G.Ricciardi)

Deliverables

D5.1	Common Cloud Computing demonstrator	2 - DESY	Demonstrator	Confidential, only for members of the consortium (including the Commission Services)	36
D5.2	Joint workshop on real time techniques	7 - QMUL	Other	Public	36
D5.3	Reference Statistical Report	6 - CEA	Report	Public	36
D5.4	Common Physics Workshop	5 - CNRS	Other	Public	48

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WP4 and WP5 Challenges

Produce real sinergies amont different groups and experiments

Profit of common development at the end of the project

4.1	Report on acrylic vessel	4	INFN	12	Internal Report
4.2	Photo-transistor electrical characterizatiom	4	INFN	24	Internal Report
5.1	Flavour and neutrino internal physics workshops	5	CNRS	36	Workshops

Outreach

WP6 (Z.Dolezal)

Task 6.1: Masterclasses both flavour and neutrino physics (Z.Doledal, L.Ludovici)

Task 6.2: Summer students at KEK (A.Soffer, *F.Sanchez)*

Task 6.3: Coordination of outreach to general public (A.Passeri)

Task 6.4: PhD co-supervision (P.Bambade)

Deliverables

D6.1	T2K Masterclasses	1 - INFN	Other	Public	48
D6.2	Summer School	12 - TAU	Other	Public	24
D6.3	Outreach Portal	1 - INFN	Websites, patents filling, etc.	Public	24
D6.4	PhD students co-supervision	5 - CNRS	Other	Public	48

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WP6 challenges

Organize a joint summer school for EU and Japan students at KEK: first time !

Organize jont EU-Japan supervision of PhD theses

Publications and Open Access

3. Open Research Data Pilot

As of the 2017 call projects funded under RISE are by default included in the Pilot on Open Research Data (ORDP) in H2020.

Participating in the Pilot does not mean that you have to open up all your research data (ex.: sensitive, commercial, medical, personal, etc.). As long as you justify your decision, you can decide what data to share. The suggested approach is: ***"as open as possible, as closed as necessary"***!

You may decide to opt out of the Pilot Data in specific cases including conflict with obligation to protect results, with confidentiality and/or security obligations, or with rules on protection of personal data.

From our withdrawal letter, attached to the Grant Agreement:

"……JENNIFER2 must observe the internal rules of Belle II and T2K to be allowed to implement its scientific program.
However JENNIFER2 management will discuss, first inside the project members, and then with the Belle II and T2K Collaborations management, if there is a possibility or an acceptable form to open their data to a larger community. (….) Therefore we ask now to opt out of the PORD, but we would like to be able to reconsider this option after the first 12 months of the JENNIFER2 project."

Any actions possible ?

Secondment management

- JENNIFER had a well established secondments accounting procedure:
  Was quite basic (emails and excel tables….) but worked and passed an audit.

- JENNIFER2 is starting with the same procedure and rules. Building blocks are:
  - Communicate secondment dates prior to travel to jennifer2-secretariat
  - Collect secondment declaration in host institutions secretariats
  - Write and sign a very basic report of your secondment (or groups of secondments)

  Note**: in JENNIFER2 you can sum up in the same secondments different WPs.**

- A more automated and powerful management has been proposed and prototyped, based on Office 365 package. However lack of specialized personpower for the moment does not allow to fully implement it. Some chances next months….

- Meanwhile other management tools are being proposed, stay tuned.

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JENNIFER2 Website

New domain jennifer2-project.eu has been bought.
Website under construction, will be released soon.

Other management issues

Common Fund and Consortium Agreement will be discussed in the Council meeting tomorrow

Ethics: be careful with export of detectors and equipments, we are comitted to keep all custom documentation for EU officers checks.

Queen Mary group moved to King's College: amend the Grant Agreement

~~Conclusions~~ Continuation

JENNIFER and JENNIFER2 projects represent a very significative support from EU to particle physics collaboration with Japan, both for flavour physics, neutrino physics and the related technologies.

Together the 2 projects cover from april 2015 to march 2023, with an overall budget of 4.8 million euros to support more than 1000 months of european researchers stays in Japanese labs.

Up to now about 250 european researchers have been involved, spanning from PhD students to full professors, and more will add.

We are commited to organize a number of outreach activities in order to spread in European civil society the knowledge about particle physics and the high quality scientific collaboration with Japan.

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