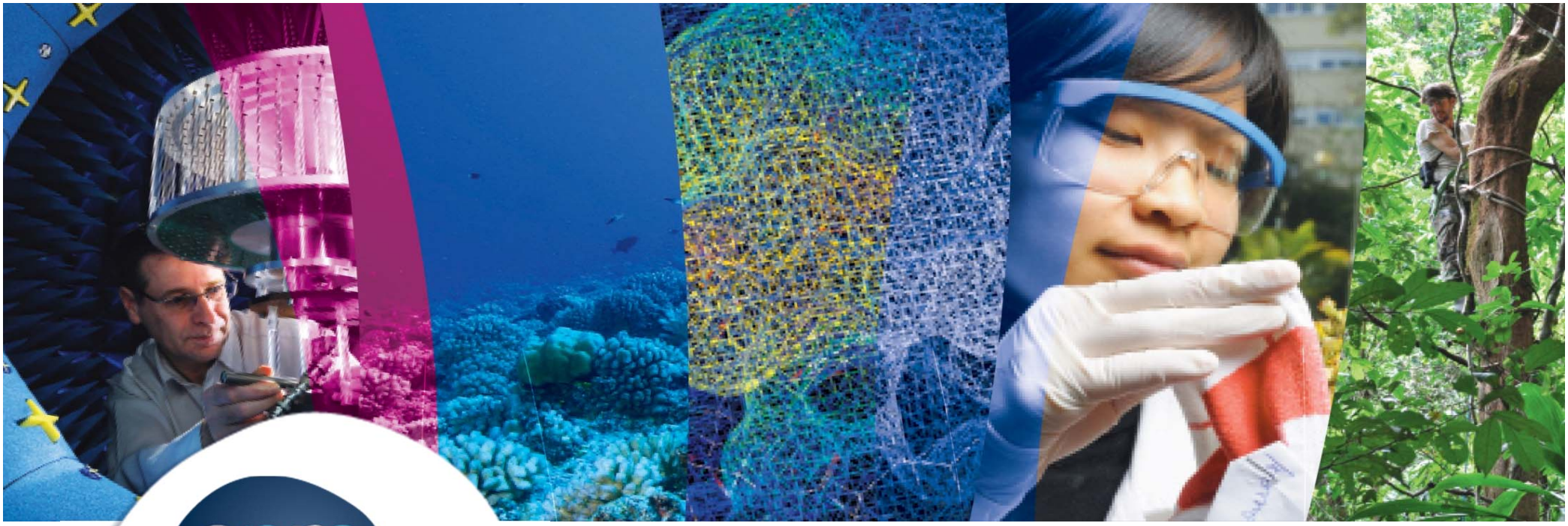

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CNRS
INTERNATIONAL COOPERATION – FOCUS JAPAN & KOREA

Chantal KHAN-MALEK
Deputy Director Asia - Oceania
Europe of Research & International Cooperation Office
National Center for Scientific Research
(CNRS - Centre National de la Recherche Scientifique)

Joint Workshop TYL/FJPPL & FKPPL , May 26th 2014

OUTLINE

- CNRS Introductory remarks on
- CNRS cooperation tools & international highlights
- Focus Japan
- Focus Korea
- Concluding remarks

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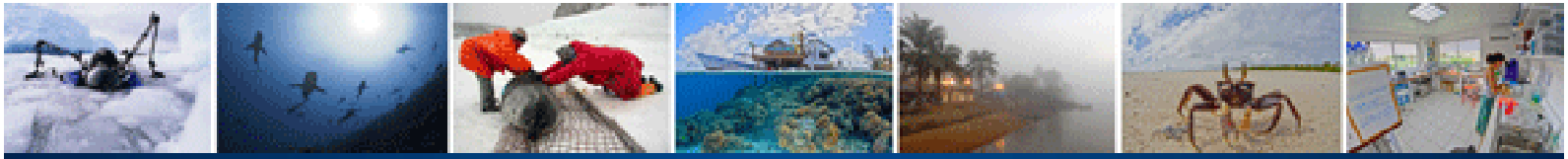
CNRS INTRODUCTORY REMARKS

Joint Workshop TYL/FJPPL & FKPPL , May 26th 2014



CNRS ORGANISATIONAL DATA

- Organization type: **scientific & technological** public organization, under administrative authority of French Ministry of Higher Education & Research
- Creation: **1939**
- **2013** budget: **3.415** billion euros
  - including 802 million CNRS-generated income
- Research carried out in **all fields of knowledge**
  - 10 thematic institutes
  - number of research units: 1,100
- **90% of research performed in partnership** with universities & research organizations as well as private companies within **joint research units**
- Workforce: **34,000** people including **25,500** permanent personnel
  - 11,400 researchers and 14,100 engineers, technicians & administrative staff
  - > 30 % international researchers recruited every year at CNRS

CNRS IS PRESENT IN ALL FIELDS OF KNOWLEDGE

- CNRS covers all scientific disciplines
  - mathematics
  - physics
  - information technology
  - nuclear and particle physics
  - earth sciences and astronomy
  - chemistry
  - biology
  - human and social sciences
  - ecology and the environment
  - engineering
- It carries out research in all fields of knowledge through 10 thematic institutes

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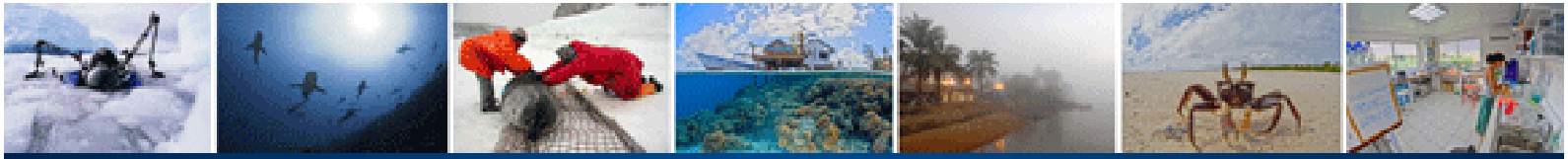
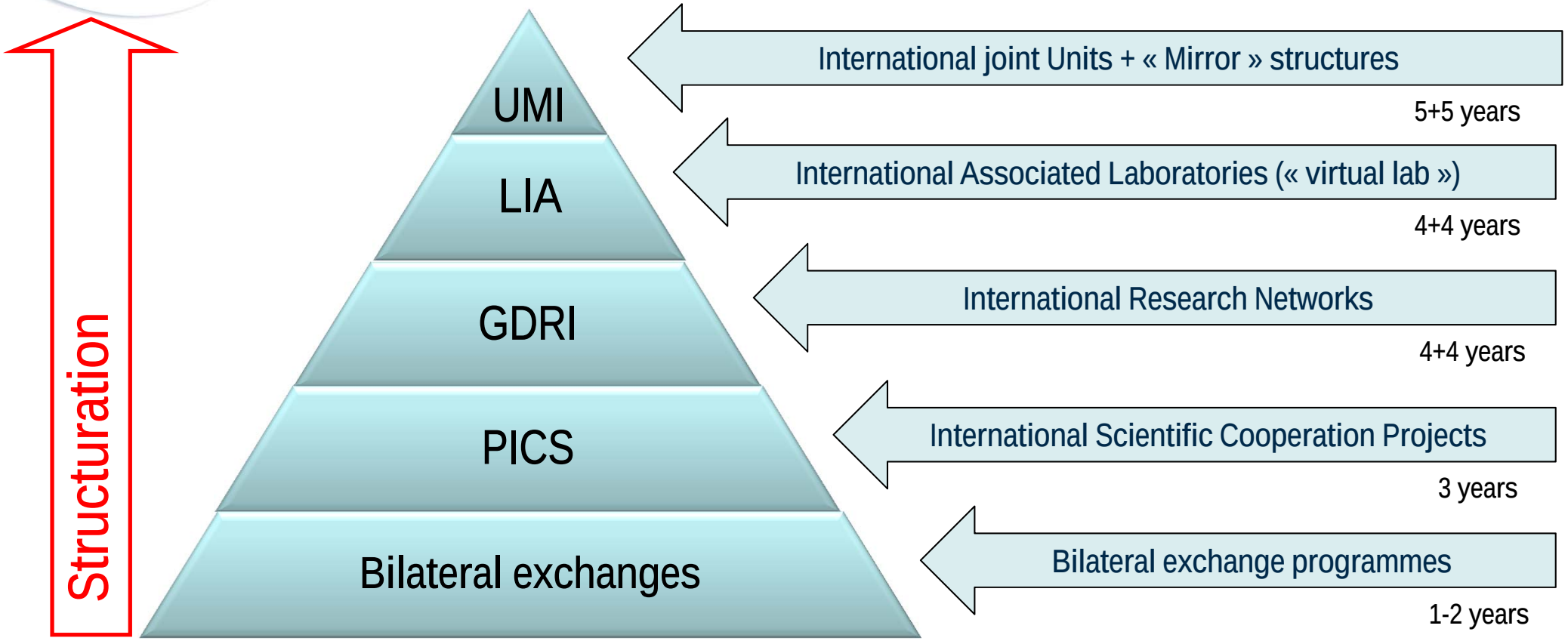
CNRS COOPERATION TOOLS & INTERNATIONAL HIGHLIGHTS

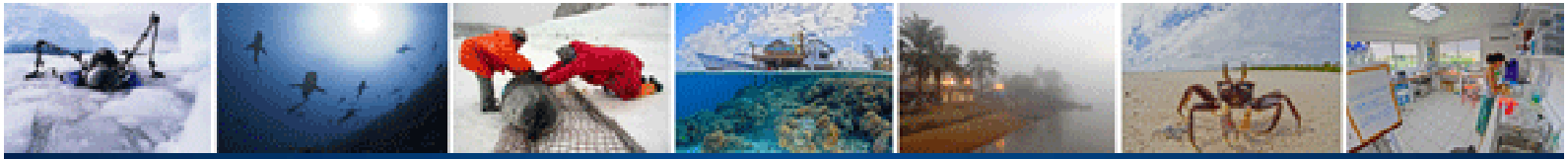
Joint Workshop TYL/FJPPL & FKPPL , May 26th 2014



CNRS INTERNATIONAL TOOLS

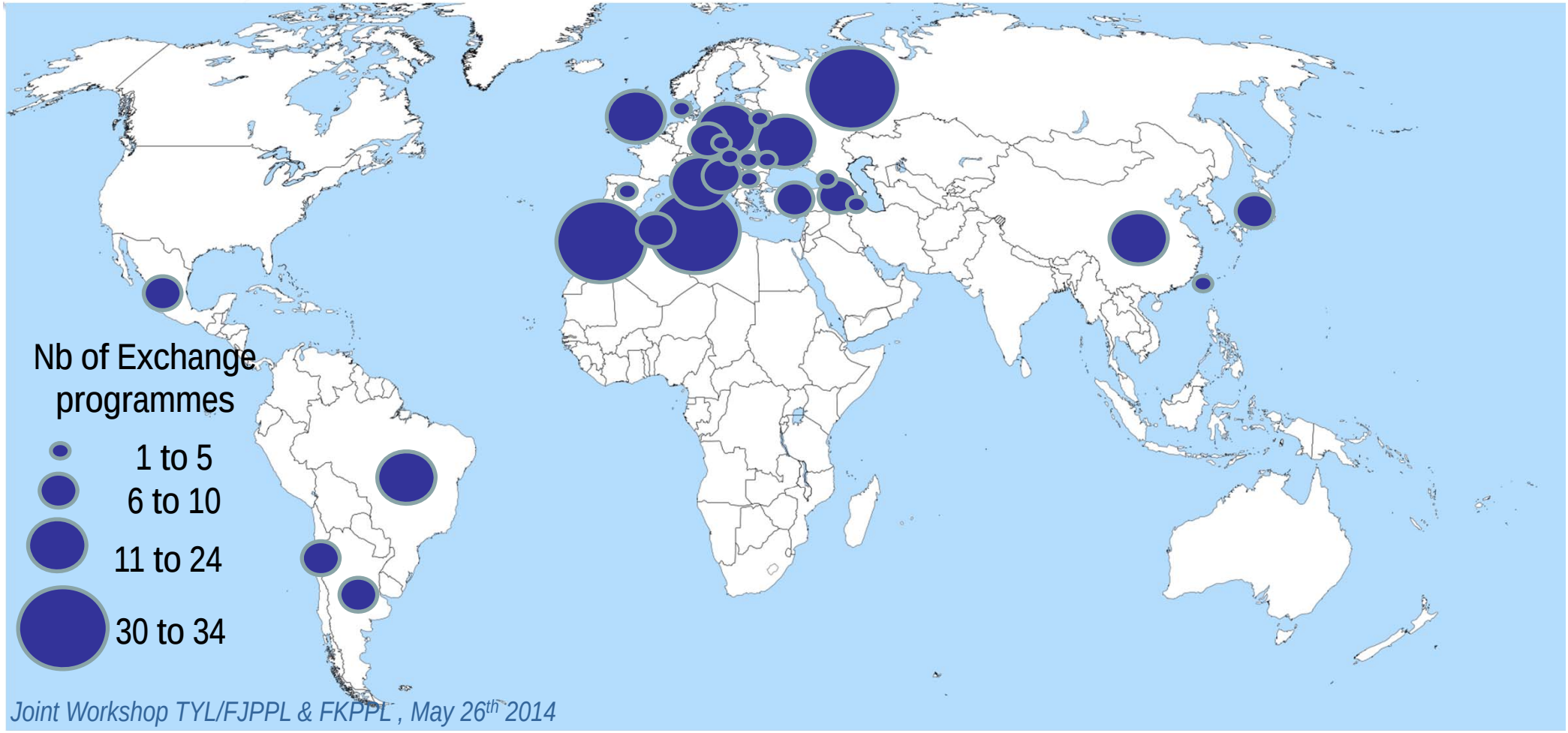
CNRS plays a key role in structuring the global network of scientific collaborations & has developed a range of cooperative tools:

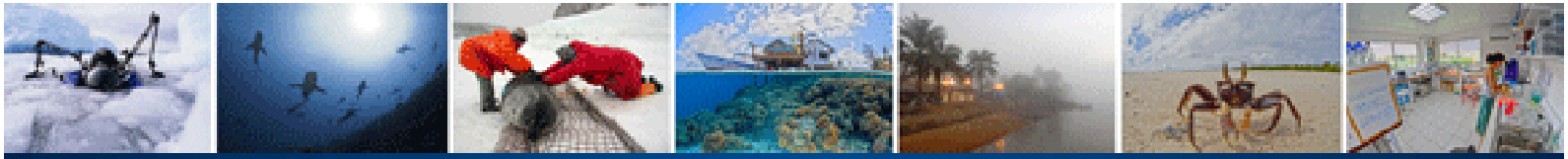




CNRS WORLDWIDE

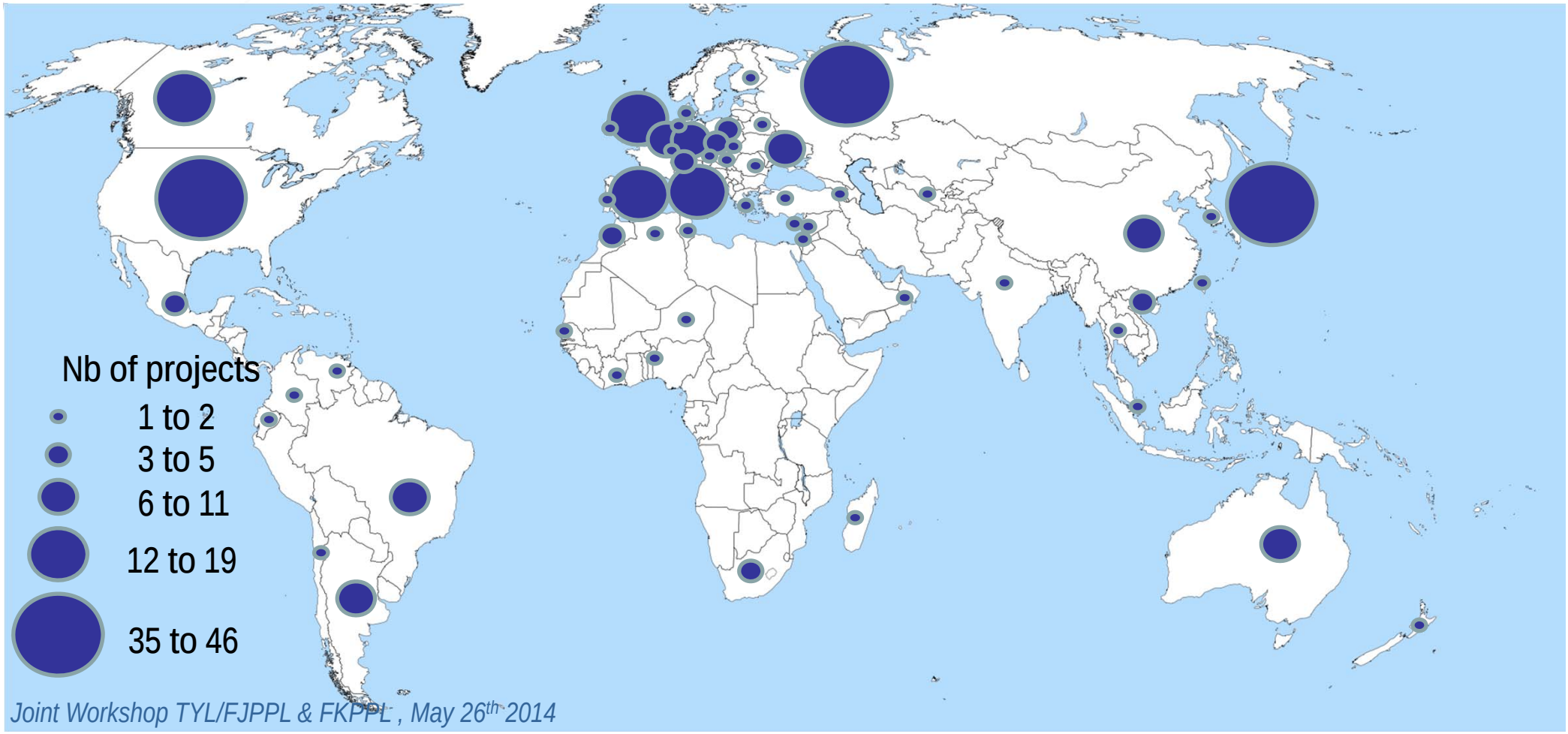
304 bilateral exchange programmes

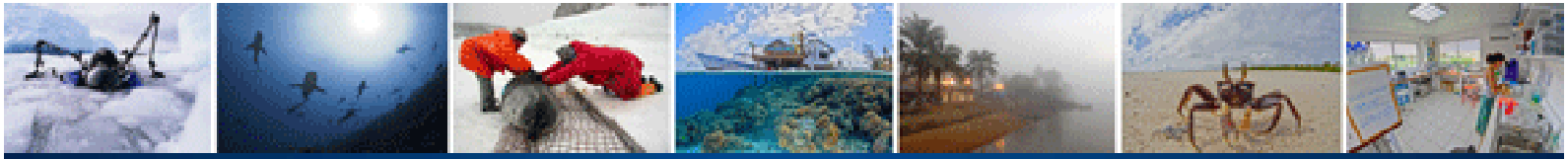




CNRS WORLDWIDE

312 International Scientific Cooperation Projects in 58 countries

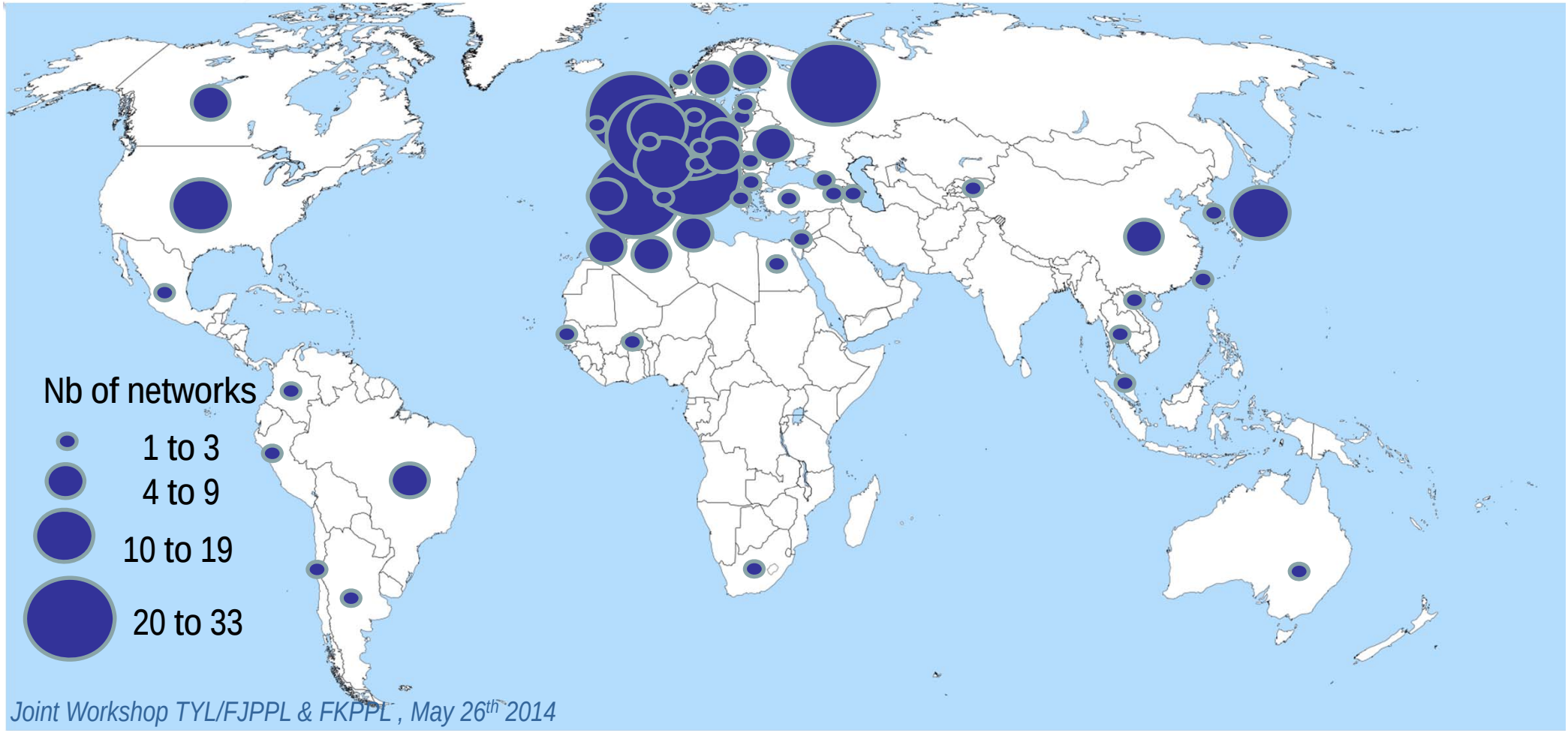


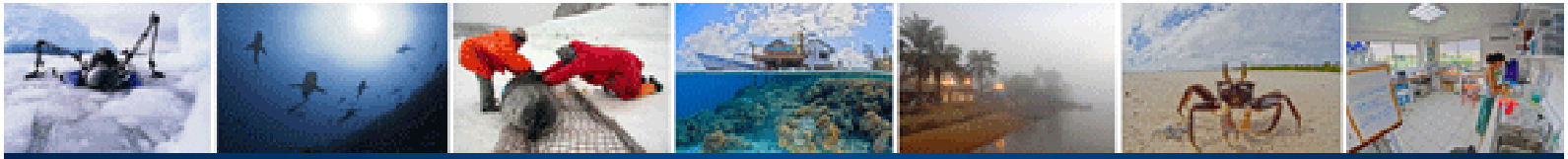


CNRS WORLDWIDE

105 International research networks:

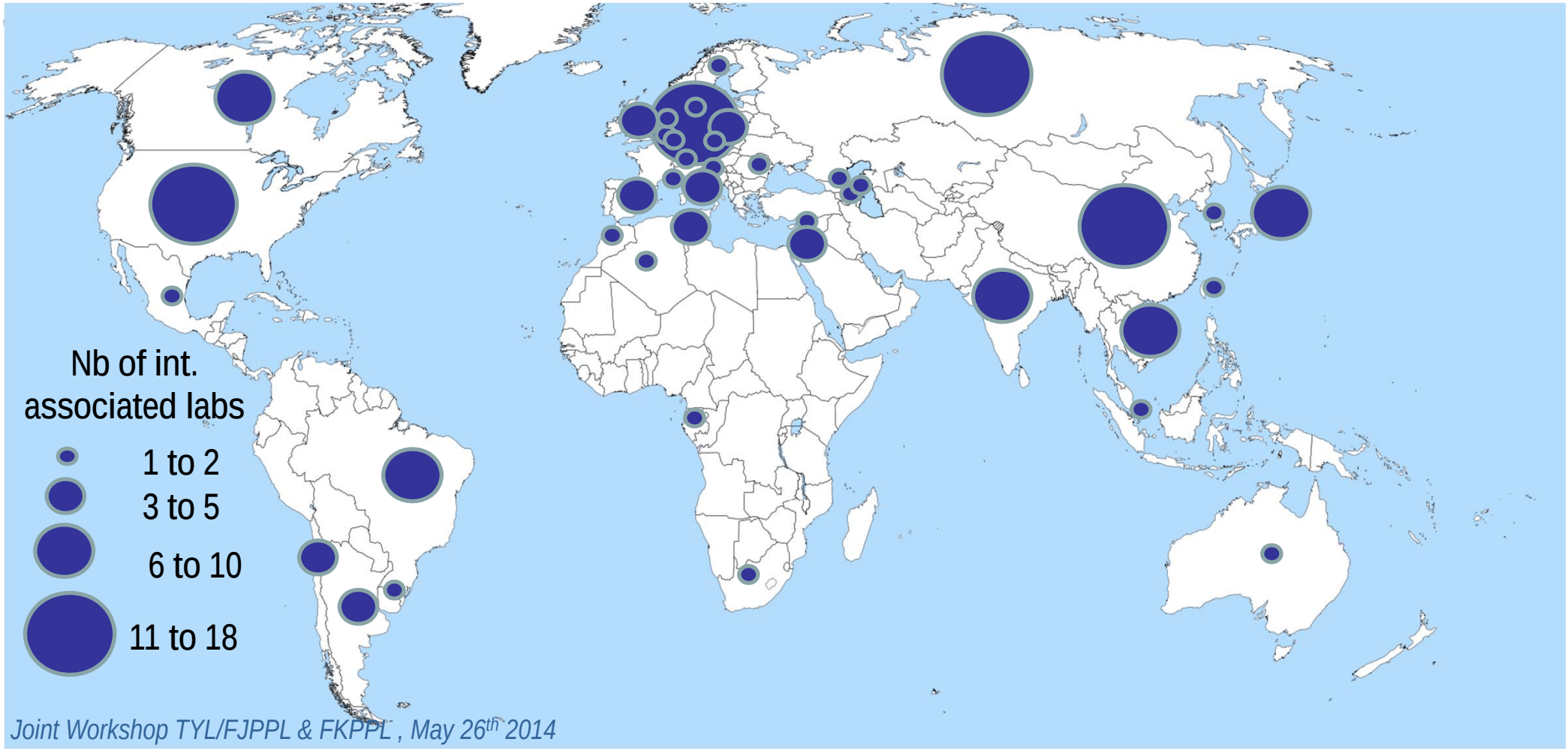
33 Bilateral networks (France + 1 country), 72 Multilateral networks

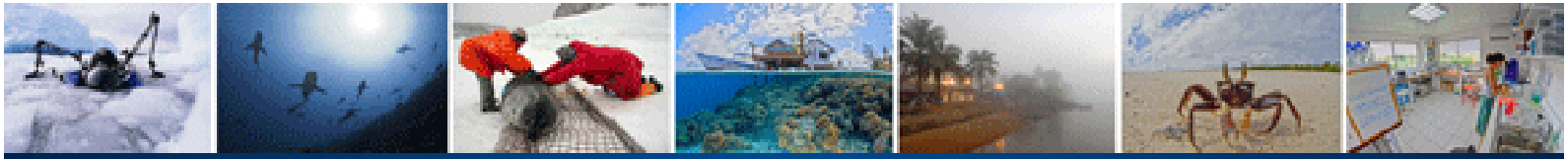




CNRS WORLDWIDE

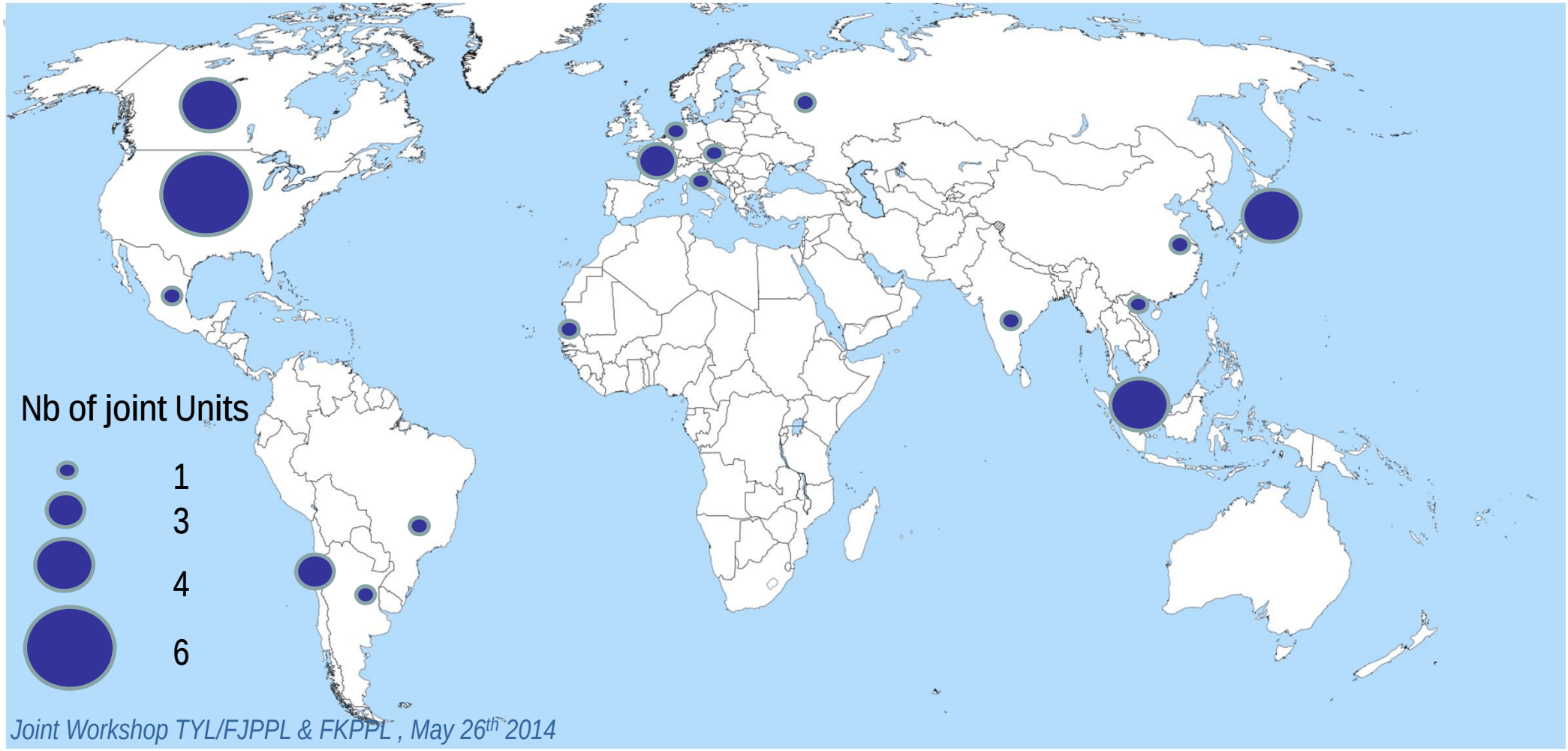
158 International Associated Lab in 41 countries

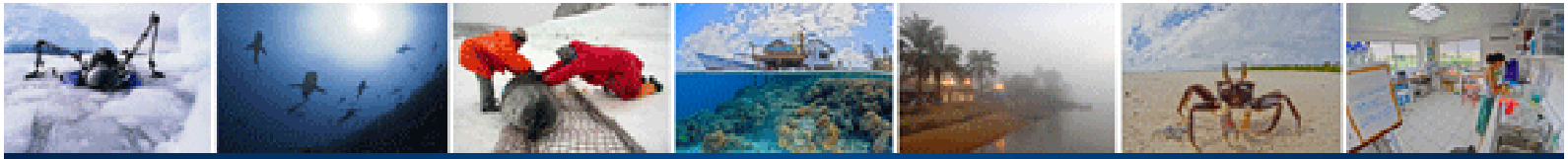




CNRS WORLDWIDE

35 International joint Units in 17 countries





CNRS REPRESENTATION OFFICES ABROAD

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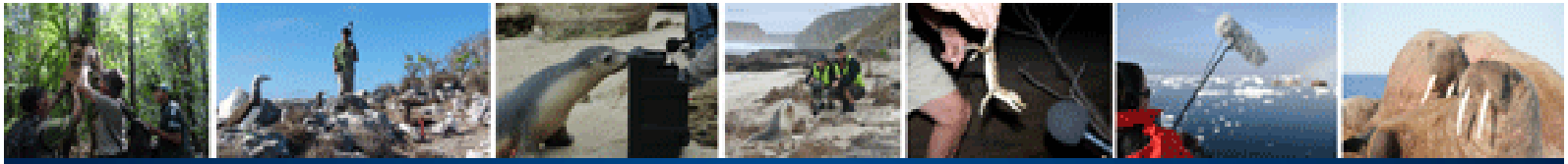
CNRS FOCUS JAPAN

Joint Workshop TYL/FJPPL & FKPPL , May 26th 2014



CNRS – JAPAN BILATERAL AGREEMENTS

- Funding agencies
  - Japan Society for the Promotion of Science, JSPS – 1973
  - Japan Science and Technology Agency, JST – 1999
- Research organisations
  - National Institute of Advanced Industrial Science and Technology, AIST – 1990
  - Institute of Physical and Chemical Research, RIKEN – 2001
  - National Institute for Materials Science, NIMS – 2004
  - High Energy Accelerator Research Organisation, KEK – 2004
- Universities
  - Tokyo University – 1994
  - Osaka University – 2005
  - Kyoto University – 2013
  - Keio University – 2013
- Other
  - Science and Technology Agency, STA – 1990
  - Nippon Telegraph and Telephone Corporation – 1991

INTERNATIONAL JOINT UNITS

Japanese Robotics Laboratory, with AIST

Laboratory for Innovative Key Materials & Structures, with Saint Gobain Company, at NIMS – St Gobain Kabushiki Gaisho – *Partnership with industry*

NEW

Maison Franco Japonaise, with French Ministry of Foreign Affairs

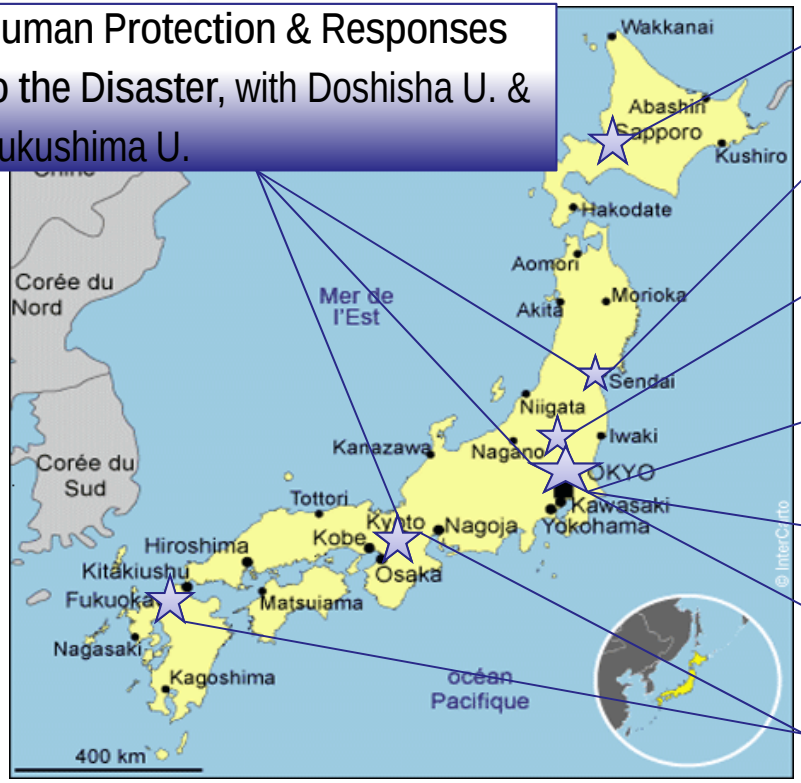
Laboratory of Integrated Micro-Mechatronic Systems, with Tokyo U - *1st UMI in the world*
Opening of UMI to EU partnership (INCOLAB): Germany, Finland & Switzerland

Japan-France Laboratory in Informatics, with Tokyo University, Keio University,& National Institute of Informatics

1 SSH, 3 engineering, 1 chemistry

INTERNATIONAL ASSOCIATED LABORATORIES

Human Protection & Responses to the Disaster, with Doshisha U. & Fukushima U.



Innovative Catalysts & Processes for Oxidation Reactions, Biomass Conversion, with Hokkaido U.

Engineering & Science Lyon Tohoku Lab, with Tohoku U.

France-Japan Particle Physics, with KEK (Tsukuba)

Reaction Diffusion Lab Mathematics & Biology, with Tokyo U. & Meiji U.

Photovoltaic, with Tokyo U.

France-Japan Nuclear Structure Problems, with RIKEN

France-Japan Magnetic Fusion Lab, with Kyushu U., Osaka U. & Nat. Institute for Fusion Science

1 SSH, 3 engineering, 1 chemistry, 2 nuclear & particle physics, 1 mathematics

INTERNATIONAL NETWORKS

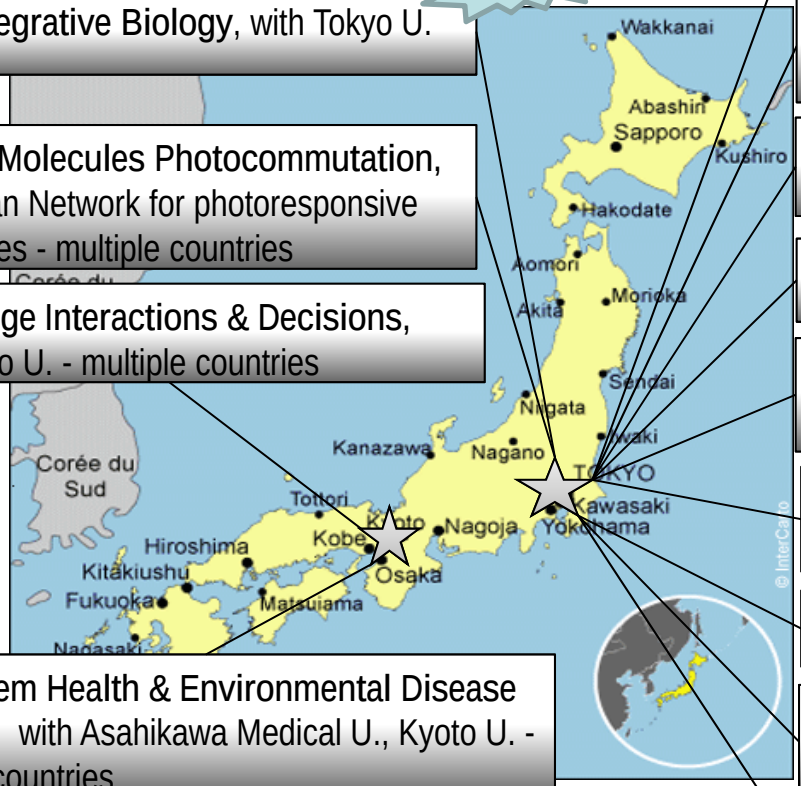
NEW

Plant Integrative Biology, with Tokyo U.

Organic Molecules Photocommutation, with Japan Network for photoresponsive substances - multiple countries

Knowledge Interactions & Decisions, with Kyoto U. - multiple countries

Ecosystem Health & Environmental Disease Ecology, with Asahikawa Medical U., Kyoto U. - multiple countries



Nano & Micro Systems, with Tokyo U. Tohoku U. - multiple countries

Origins of Globalization & Europe-Asia Divergence, with U. of Tokyo multiple countries

Singularity Theory, with Hokkaido U., Kagoshima U., Kyushu U., Tokyo U. of Science

Cancer, with Scientific Support Programs for Cancer Research

Environmental Catalysis for Sustaining Clean Air & Water, with AIST

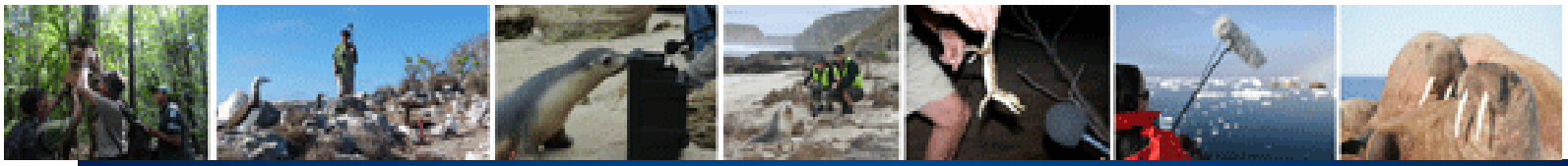
Human Globalization: Migrations & Generations, with Maison franco-japonaise - multiple countries

Orientalism, with Toyo Bunko - multiple countries

Multifunctional Molecular, with Tokyo Ins. of Techno, Tokyo U., Kyoto U., Meijo U., Tokohu U., Kyushu Ins. of Techno, Nagiya U., RIKEN

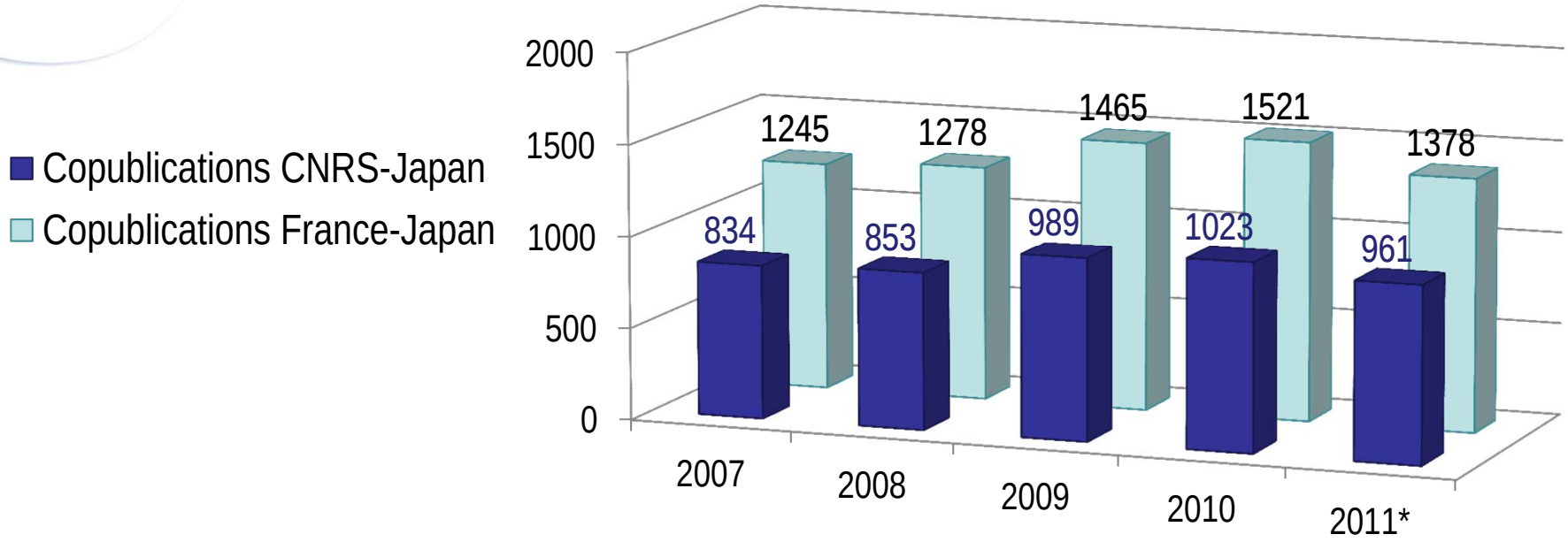
Finance and employment in Asia, with Waseda U. – multiple countries

NEW



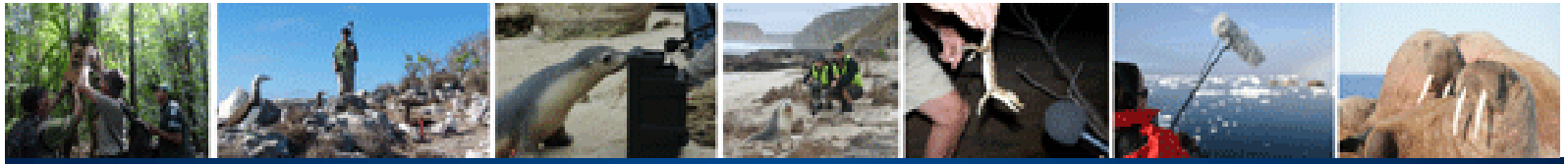
CO-PUBLICATIONS WITH JAPAN (1)

Evolution of the number of co-publications



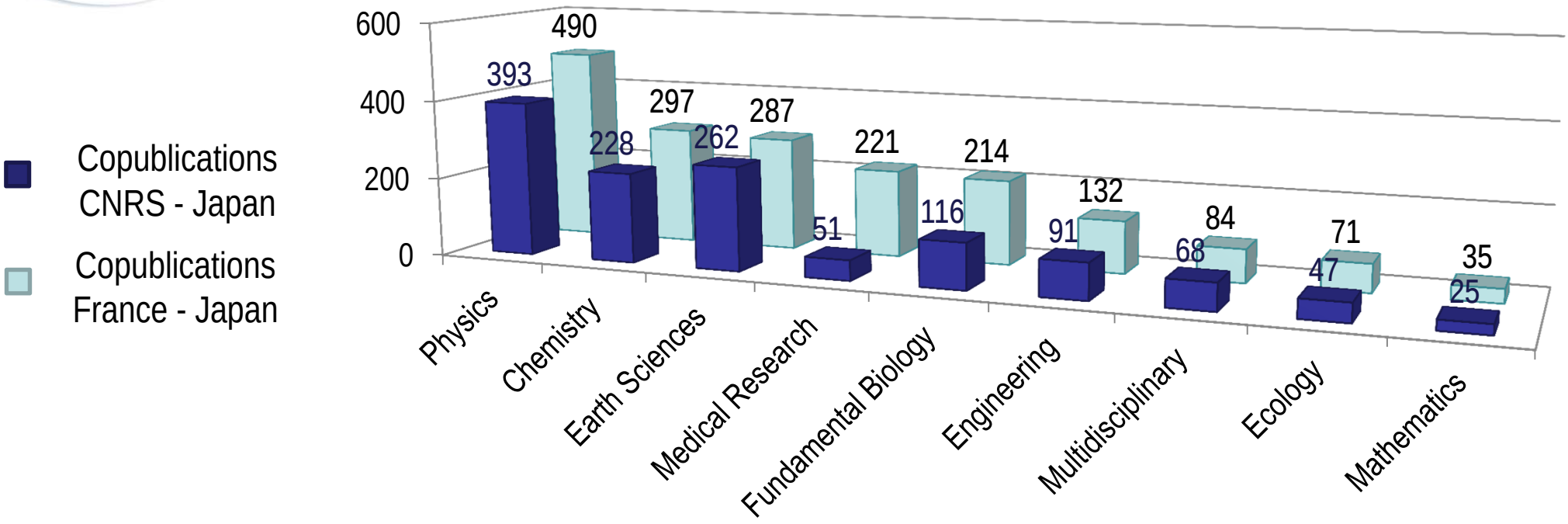
- France: 5th scientific partner of Japan, afer USA, China, Germany & UK
- CNRS: 70% of France – Japan co-publications in 2011
- 6% of Japanese international co-publications are co-published with CNRS

Source: SCI (DVD Edition; Thomson Reuters); analysis CNRS/SAP2S



CO-PUBLICATIONS WITH JAPAN (2)

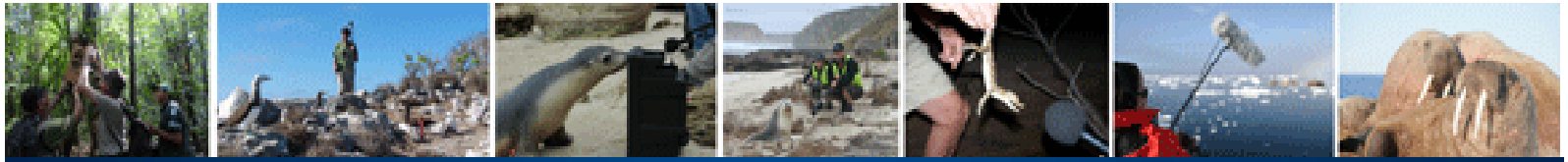
Co-publications in 2011 per thematic field



- Physics: 37% of CNRS – Japan co-publications

  21% IN2P3: one of highest collaboration

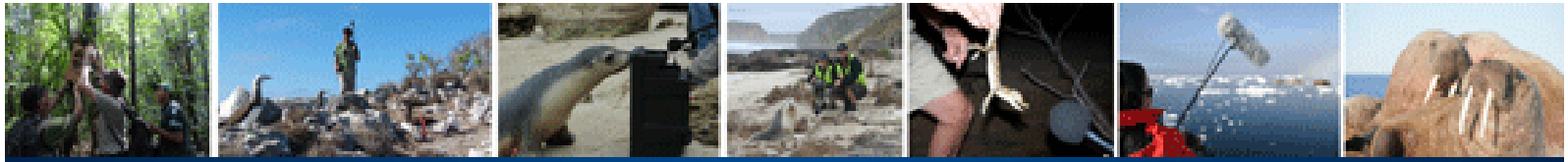
Data: SCI (DVD Edition; Thomson Reuters); analysis CNRS/SAP2S



CO-PUBLICATIONS WITH JAPAN (3)

Main Japanese Universities co-publishing with CNRS

Universities - Organisations	Number of copublications CNRS-Japan (2010)	% of CNRS - Japan copublication
UNIV-TOKYO	184	18.0%
WASEDA-UNIV	124	12.1%
KYOTO-UNIV	111	10.9%
TOKYO-INST-TECHNOL	107	10.5%
HIROSHIMA-UNIV	97	9.5%
UNIV-TSUKUBA	83	8.1%
TOHOKU-UNIV	79	7.7%
NAGOYA-UNIV	72	7.0%
RIKEN	67	6.5%
OSAKA-UNIV	64	6.3%



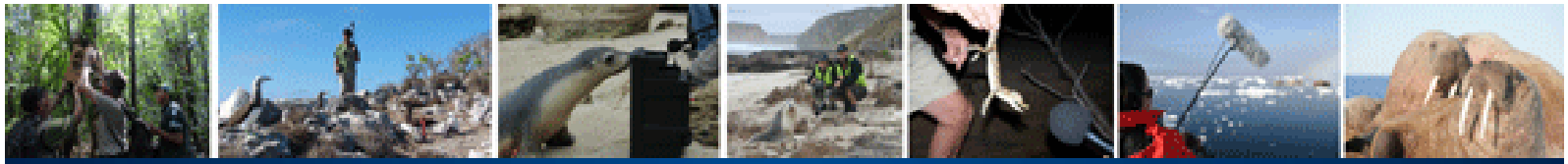
EUROPEAN PROGRAMME WITH JAPAN

ERA-NET CONCERT-Japan

CONCERT JAPAN
Connecting and Coordinating European Research and Technology Development with Japan

SEVENTH FRAMEWORK PROGRAMME

- CONCERT-Japan: ERA-Net project aiming at **enhancing the cooperation of European countries with Japan**, in various areas of S&T
- 13 partners (MEXT, JSPS and JST for Japan) – Coordination: TUBITAK (Turkey).
- **Duration** of the project: January 2011 – December 2014 (prolongation of 1 year)
- 2 Joint Calls launched:
  - September 2012: "Resilience against disaster" & "Energy storage and distribution", 9 projects funded
  - February 2014: "Photonic Manufacturing", evaluation ongoing
- CNRS is the Joint Call Secretariat



FRONTIERS OF SCIENCE / ENGINEERING (FoS / FoE)

Creating platforms for brilliant young researchers (under 45) to have cross-disciplinary interactions with fellow scientists of other countries

- **Japanese-French FoS Symposia** launched in 2007
  - **Partners:** CNRS, French Ministry of Foreign Affairs, French Ministry for Higher Education and Research, Conference of the Directors of French Engineering Schools (CDEFI) / **Japan Society for the Promotion of Sciences**
  - 3 days once a year alternately in France and in Japan
  - 70 participants (35 French / 35 Japanese)
  - 7 sessions covering 7 fields (Physics and Astrophysics, Life / Medical Sciences, Chemistry, Earth Sciences / Environment, Materials Science, Mathematics / Informatics, Social Sciences / Humanities)
- **Japanese-French FoE Symposia** launched in 2010
- Secretariat for the FoS/FoE French consortium is hosted at CNRS

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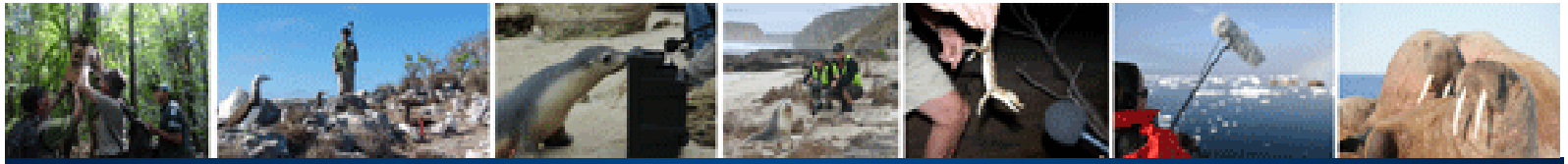
CNRS FOCUS SOUTH KOREA

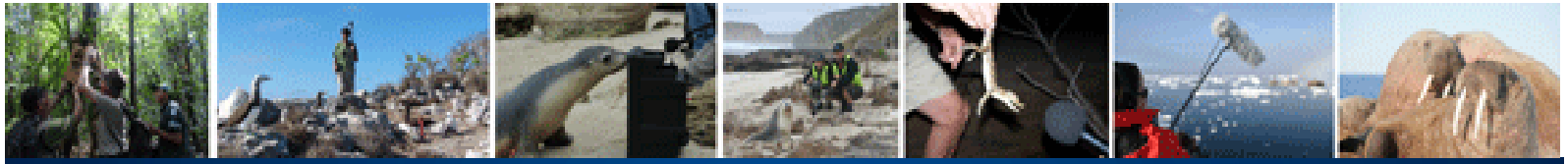
Joint Workshop TYL/FJPPL & FKPPL , May 26th 2014



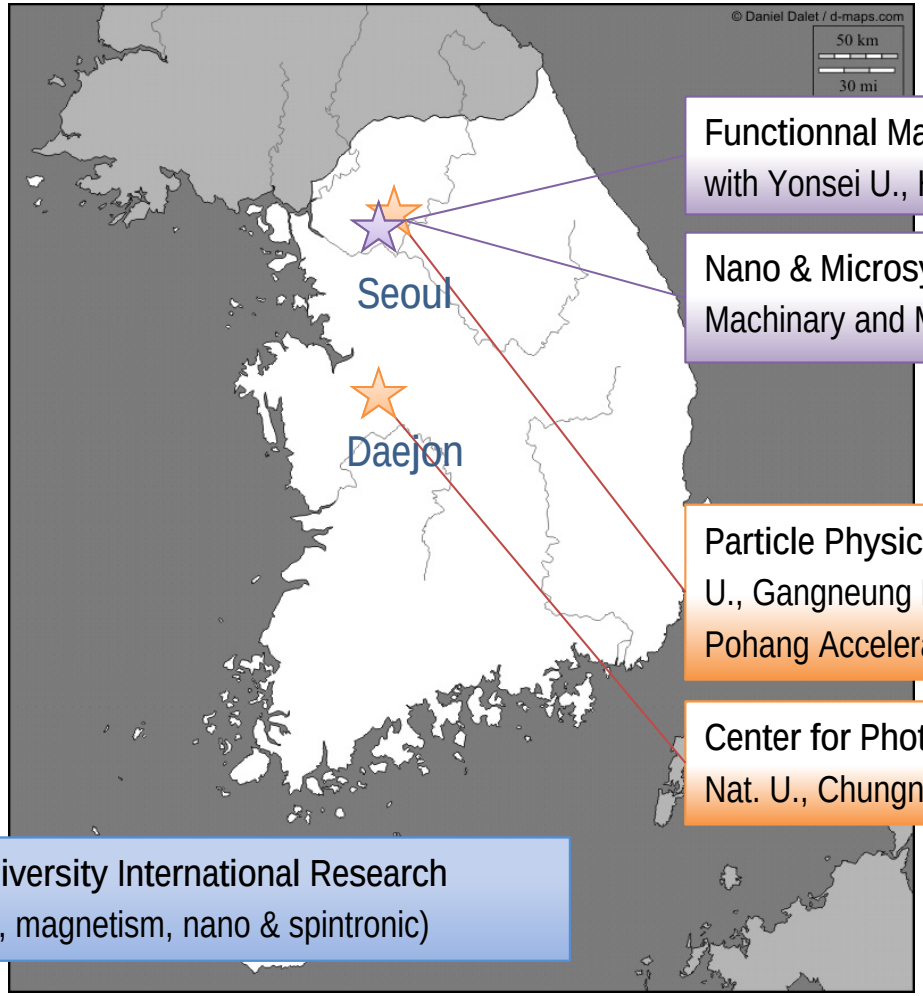
CNRS – SOUTH KOREA BILATERAL AGREEMENTS

- Funding agencies
  - Korea Research Council of Fundamental Science and Technology, KRCFST – 2009
  - National Research Foundation of Korea, NRF – letter of intent
- Research organisations
  - Institut Pasteur of Korea, IPK – 2005
  - Korea Research Institute of Chemical Technology, KRICT – 2010
  - Gwanju Institute of Science & Technology
  - Institute for Basic Science, IBS – 2013
  - National Research Council for Economics Humanities and Social Sciences, NRCS – 2014
- Other
  - Pohang Iron and Steel Company, POSCO – 2012

Data: SCI (DVD Edition; Thomson Reuters); analysis CNRS/SAP2S



CNRS STRUCTURING ACTIONS IN SOUTH KOREA



International Research Networks

Functionnal Material for Organic Optics, Electronics & Devices, with Yonsei U., Hannam U., Ewha U., Seoul Nat. U., SWU

Nano & Microsystems, with Seoul Nat. U., Korea Institute of Machinary and Materials - multiple countries

International Associated Laboratories

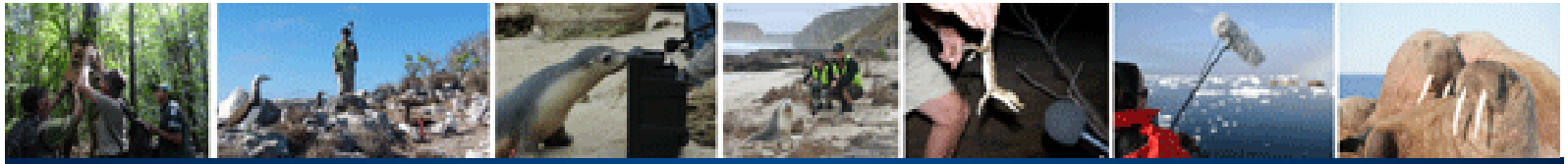
Particle Physics Laboratory, with KISTI, Chonnam Nat. U., Ewha U., Gangneung Nat. U., Ins. of Radiological & Medical Sciences, Pohang Accelerator Lab., Sung Kyun Kwan U.

Center for Photonics & Nanostructures, with KAIST, KIST, Seoul Nat. U., Chungnam Nat. U., Pusan Nat. U.

1 engineering, 1 chemistry, 1 particle physics, 2 physics

Other action

CNRS-Ewha Womans University International Research Center (Quantum imagery, magnetism, nano & spintronic)

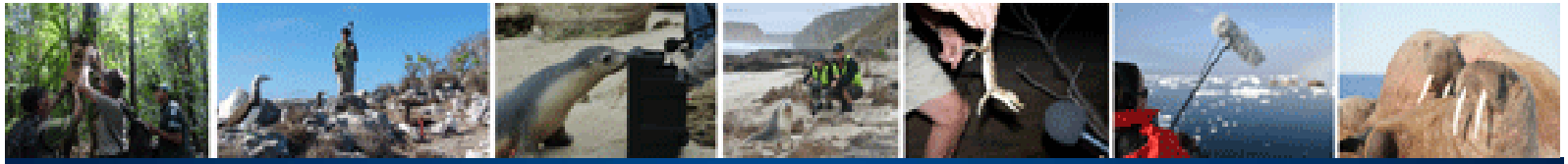


CO-PUBLICATIONS WITH SOUTH KOREA (1)

	2000	2005	2011	
Publications South Korea	12 335	21 821	35 071	X 3
Co-publications CNRS – South Korea	100	180	455	X 3

- High increase of Korean publications between 2000 and 2011 (x 3)
- France is South Korea's 7th scientific partner at the global level (3rd at the European level)
- CNRS: more than 70% of France – South Korea co-publications in 2011
- 4.6% of Korean international co-publications are co-published with CNRS

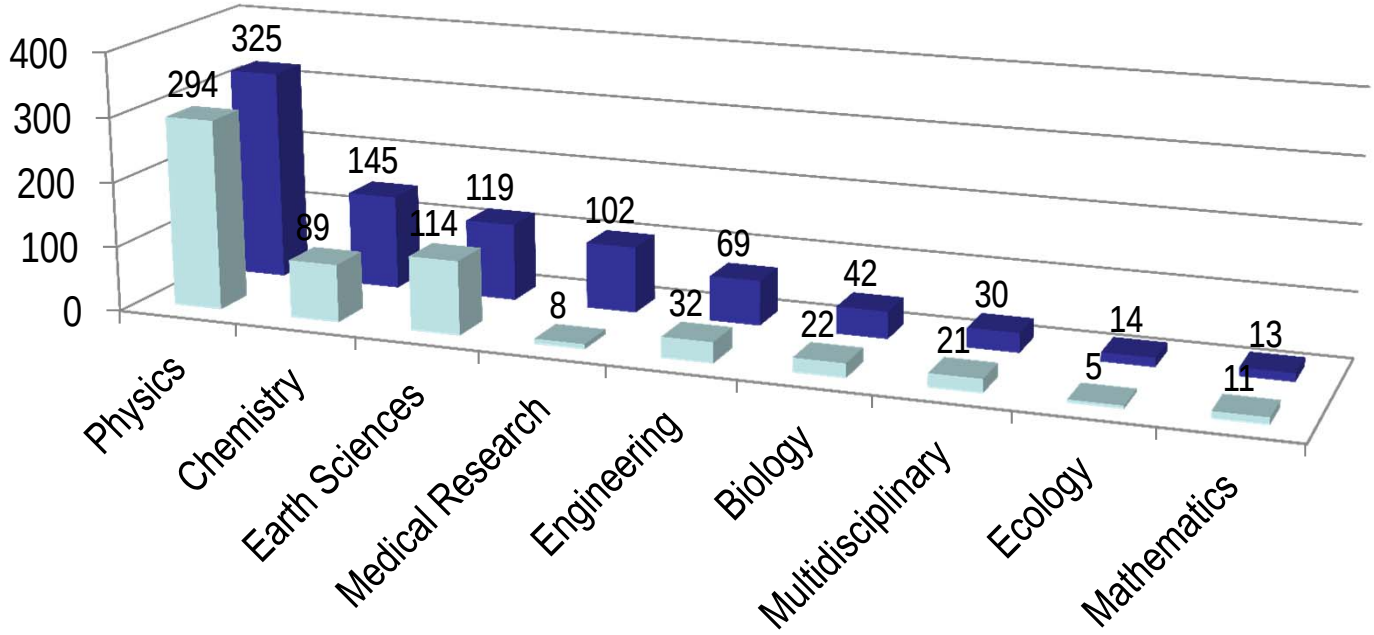
Data: SCI (DVD Edition; Thomson Reuters); analysis CNRS/SAP2S



CO-PUBLICATIONS WITH SOUTH KOREA (2)

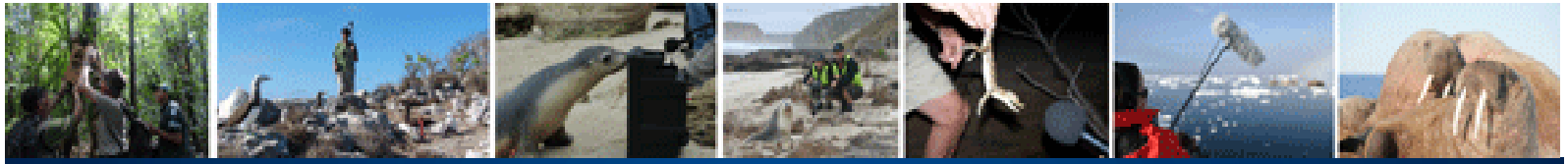
Co-publications in 2011 per thematic field

- Co-publications CNRS – South Korea
- Co-publications France – South Korea



- Around 60% CNRS co-publications are in physics

Data: SCI (DVD Edition; Thomson Reuters); analysis CNRS/SAP2S



CO-PUBLICATIONS WITH SOUTH KOREA (3)

Main South Korean Universities co-publishing with CNRS

South Korean Universities	% of CNRS co-publications
KOREA-UNIV	28.1%
KYUNGPOOK-NATL-UNIV	24.8%
CHONNAM-NATL-UNIV	24.2%
SUNGKYUNKWAN-UNIV	24.6%
SEOUL-NATL-UNIV	22.0%
KANGWON-NATL-UNIV	14.1%
UNIV-SEOUL	13.8%
CHONBUK-NATL-UNIV	11.2%
KOREA-INST-SCI-&-TECHNOL-INFORMAT	8.6%
YONSEI-UNIV	6.6%

Data: SCI (DVD Edition; Thomson Reuters); analysis CNRS/SAP2S

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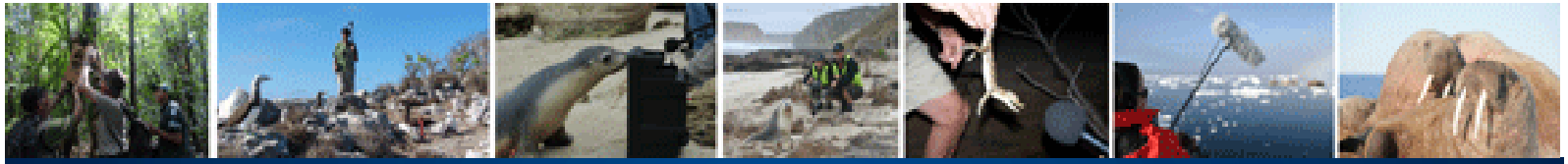
CONCLUDING REMARKS

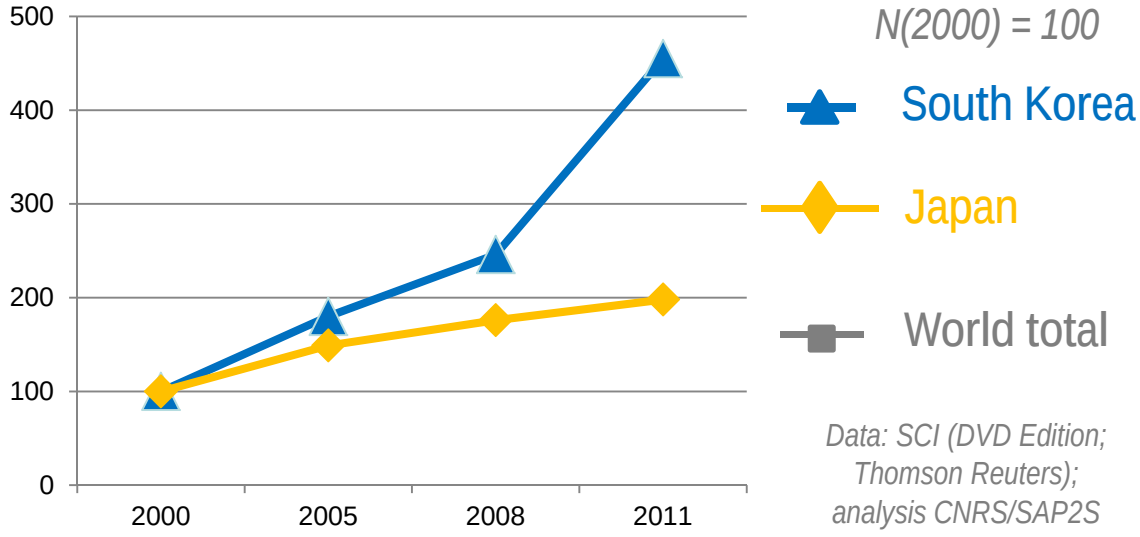
Joint Workshop TYL/FJPPL & FKPPL , May 26th 2014



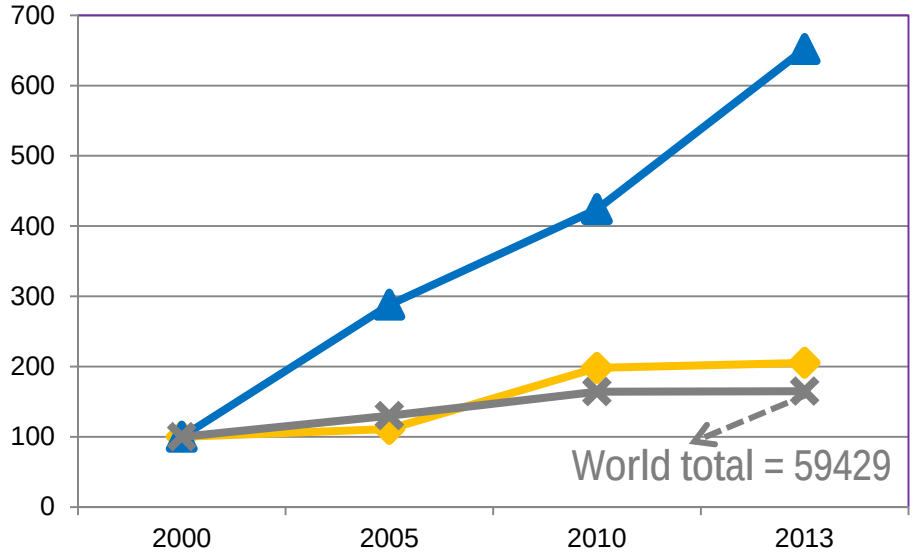
CONCLUDING REMARKS (1)

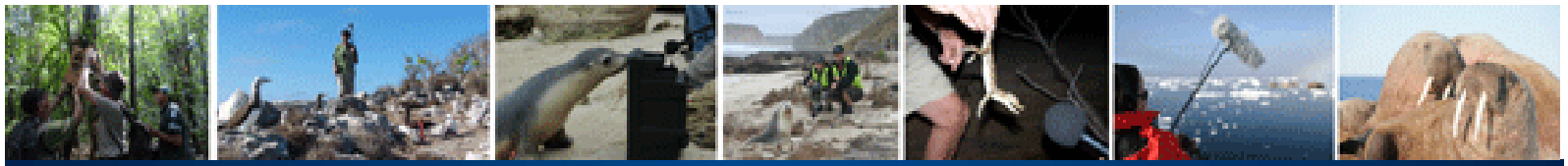
- Japan is the oldest and main partner of CNRS in Asia
- Cooperation with South Korea much more recent than that with Japan
- Number of co-publications of CNRS with Japan has increased steadily over time
  - meanwhile sharp increase in co-publication rate with South Korea
- Similar trend observed with number of missions from CNRS labs to both countries
  - Japan: 2nd destination in Asia; South Korea 4th one

Evolution of copublication Nb normalized to Nb at year 2000



Evolution of mission Nb normalized to Nb at year 2000





CONCLUDING REMARKS (2)

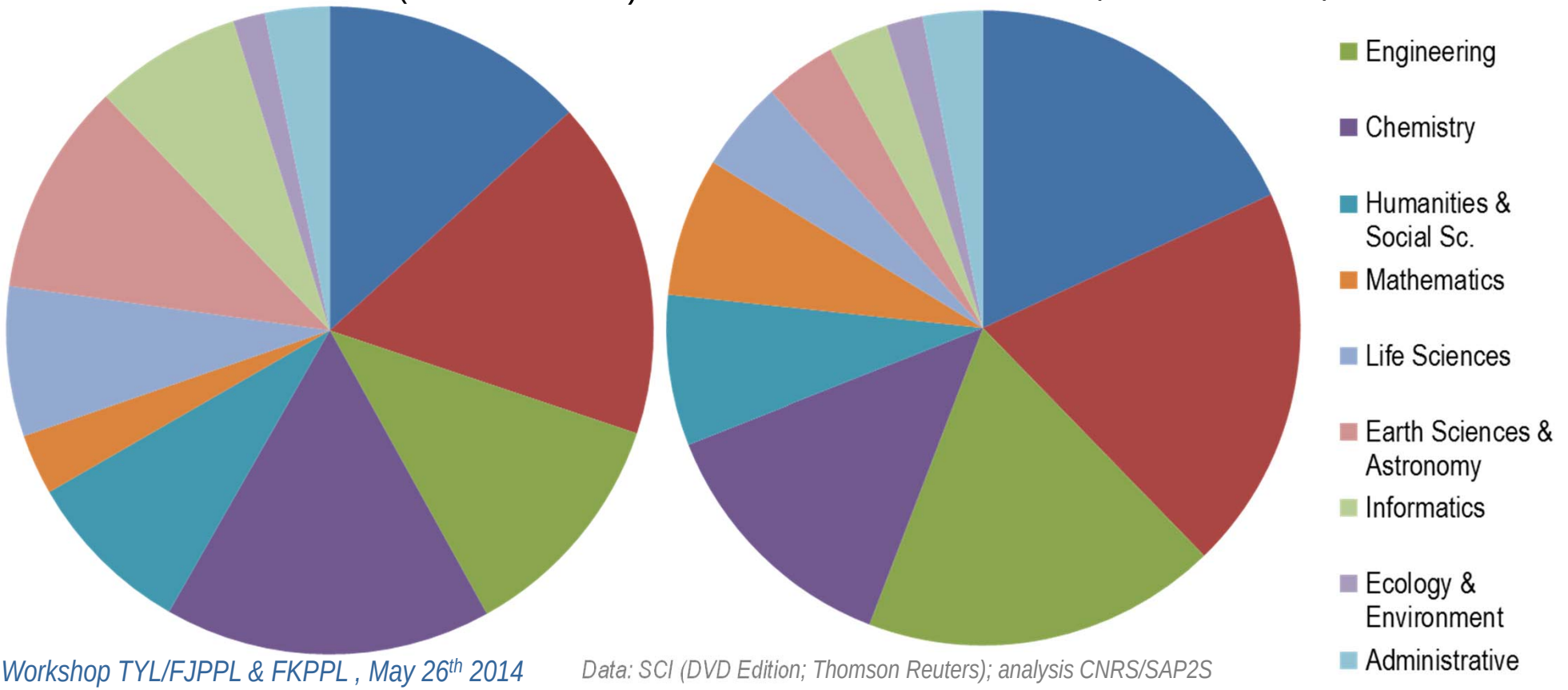
Distribution of 2013 CNRS missions per thematic field

To Japan

Total Nb of missions = 1390 (2.3% worldwide)

To South Korea

Total Nb of missions = 326 (0.5% worldwide)



Data: SCI (DVD Edition; Thomson Reuters); analysis CNRS/SAP2S

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Thank you for your attention