

# The ESS-J-PARC collaboration perspectives



The first MOU in 2012.  
Renewal in 2017 in Stockholm.  
Current MOU in 2022 at ESS.

DG's Visit to J-PARC  
Colin Carlile in 2012  
Jim Jeck in 2014

DG's Visit to ESS  
Naohito Saito in 2017  
Takashi Kobayashi in 2022



The ceremony in 2022. Lars Börjesson ( ex-chair of the ESS council), Helmut Schober (DG of ESS) , Takashi Kobayashi (DG of J-PARC) and Masaki Noke (Japan ambassador to Sweden)



Naohito Saito (DG of J-PARC) and Chair of the ESS Council Lars Börjesson exchange the Memorandum of Collaboration in 2017 in Stockholm.



# Visit of J-PARC colleagues to ESS



Visit to the construction site at ESS in 2017

## Commissioning Workshop in 2022





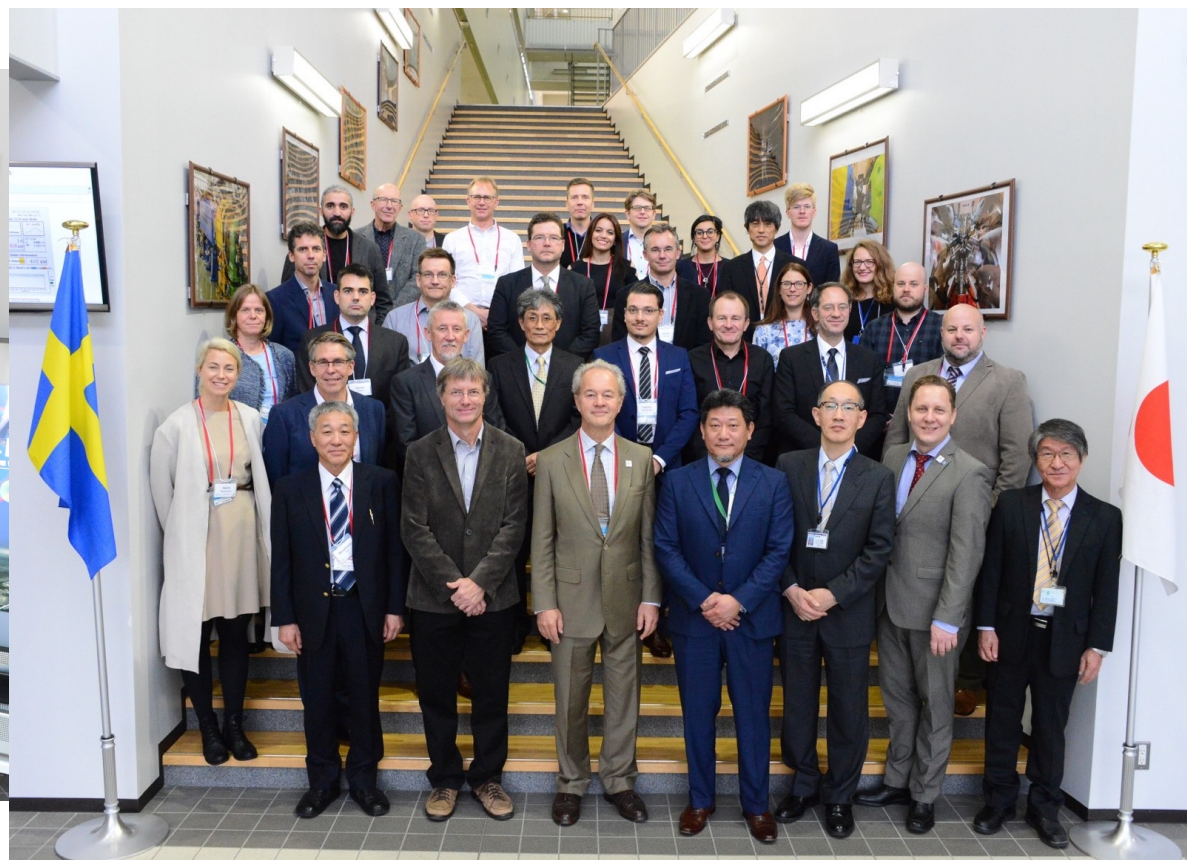
# Visit of ESS colleagues to J-PARC



Workshop in 2016, June at J-PARC



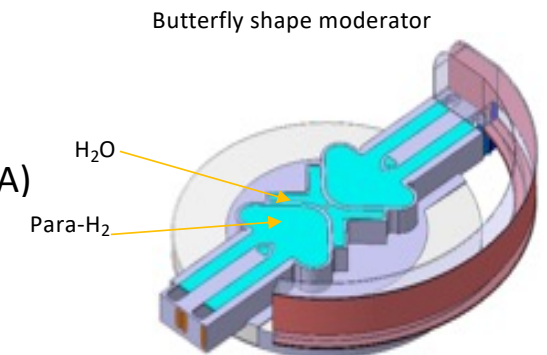
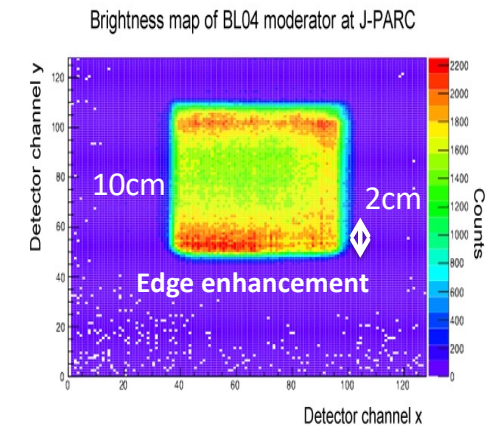
Workshop in 2018 Nov. at J-PARC



# What has been achieved in the Collaboration, so far



- 1) Experimental verification of the thin moderator performance done at J-PARC in 2015.  
Adoption of Butterfly moderator at ESS (ESS(5MW)  $\sim$  15 X MLF(1MW) at 5Å)
- 2) Proton beam monitor development at J-PARC since 2018  
Still an active exchange by SAKURA
- 3) Radiation monitor development has been proposed with very high peak intensity at J-PARC.  
(Since 2018, and 2023 by SAKURA)
- 4) Commissioning workshop at ESS in 2022  
(lesson learnt at J-PARC in 2008)
- 5) Para-Hydrogen technology (on-line Raman since 2018, and 2023 by SAKURA)
- 6) Deuteration Technique (2023 by SAKURA)
- 7) Exchange information on data handling, reduction and analysis software (2023 by SAKURA)
- 8) Opportunity of Science and Instrumental Technical Knowledge at J-PARC through call-for-proposal. 72 of 132 proposals from Sweden were accepted in 2015A-2024A term.



# Perspectives of the collaboration now on



1. Commissioning at ESS in 2025 (Immediate plan)  
(Accelerator, Target, Moderator, Instruments)

2. Future Projects

J-PARC/MLF

- a) MLF –Double (Source, Instruments) (Medium term project)
- b) MLF ST-2 (Rotating target ?) (Long term project)
- c) ADS superconducting linac

ESS

- d) 2<sup>nd</sup> Instruments (16<sup>th</sup> -22<sup>nd</sup>) at ESS after 2026 ?
- e) Upgrade to 5MW
- f) N-Nbar proposal
- g) Neutrino facility

3. Steady exchange

- a) Data Analysis software, AI for experiment
- b) Sample environment technology;  
deuteration, robotic automation, pulse magnet etc.
- c) Scientific exchange

