OVERVIEW OF UK NUCLEAR PHYSICS

UK Nuclear Physics

- **Science Areas are:**
  - Nuclear Structure and Nuclear Astrophysics
  - Hadronic Physics
  - Nuclear Theory
- **Industrial Nuclear Data**
- **Public Engagement & Outreach**
- **Applications and Innovation**

Concentrate research on key areas where the community can gain leadership and influence

The Nuclear Physics Strategy document

- Scope and range of Physics
- Current projects
- Future projects
- Other issues
- 10 year horizon

- Last revision June 2018

https://stfc.ukri.org/about-us/how-we-are-governed/advisory-boards-panels-committees/nuclear-physics-advisory-panel/

Size of the UK community

- There are 68 academic/faculty staff @ 11 institutions carrying out nuclear physics research
  - Number has been growing with recent new appointments
  - All (except 3 at STFC Daresbury) are University funded
- There are 60 Research and Professional staff supporting the academic staff
- There are 90 Research students working with the academic staff
- Approximately 48 funded by STFC

Size of the UK community

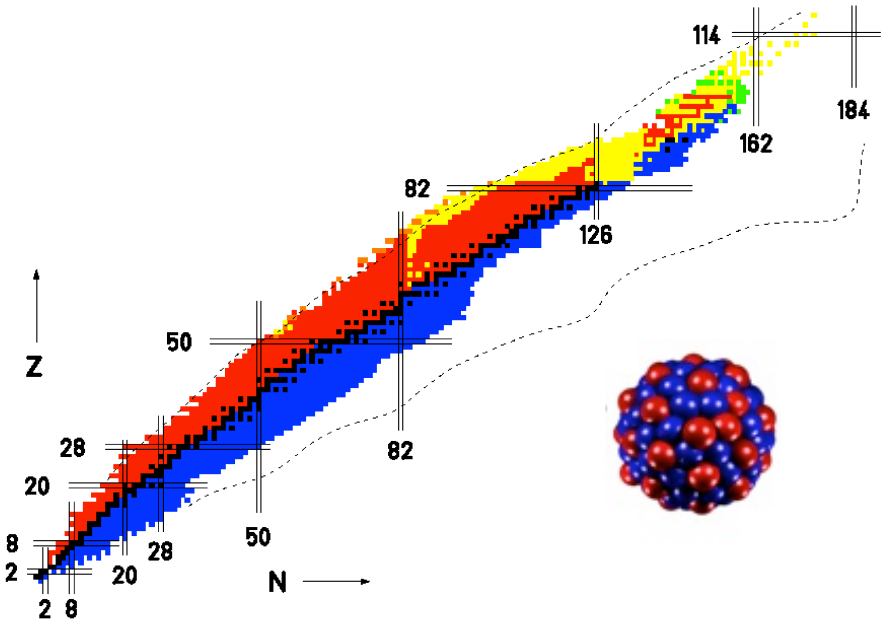
Nuclear Physics : Particle Physics : Astronomy

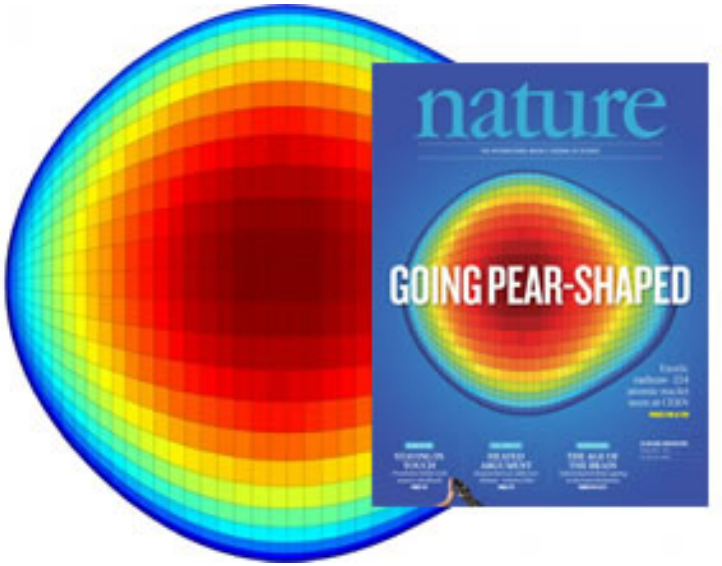
1 4 6

UK Annual budget

- Nuclear Physics Research £6M pa
- NP Studentships/Fellowships £1.1M pa
- Income from KE applications… £2M pa

Locations of UK Nuclear Physics Groups

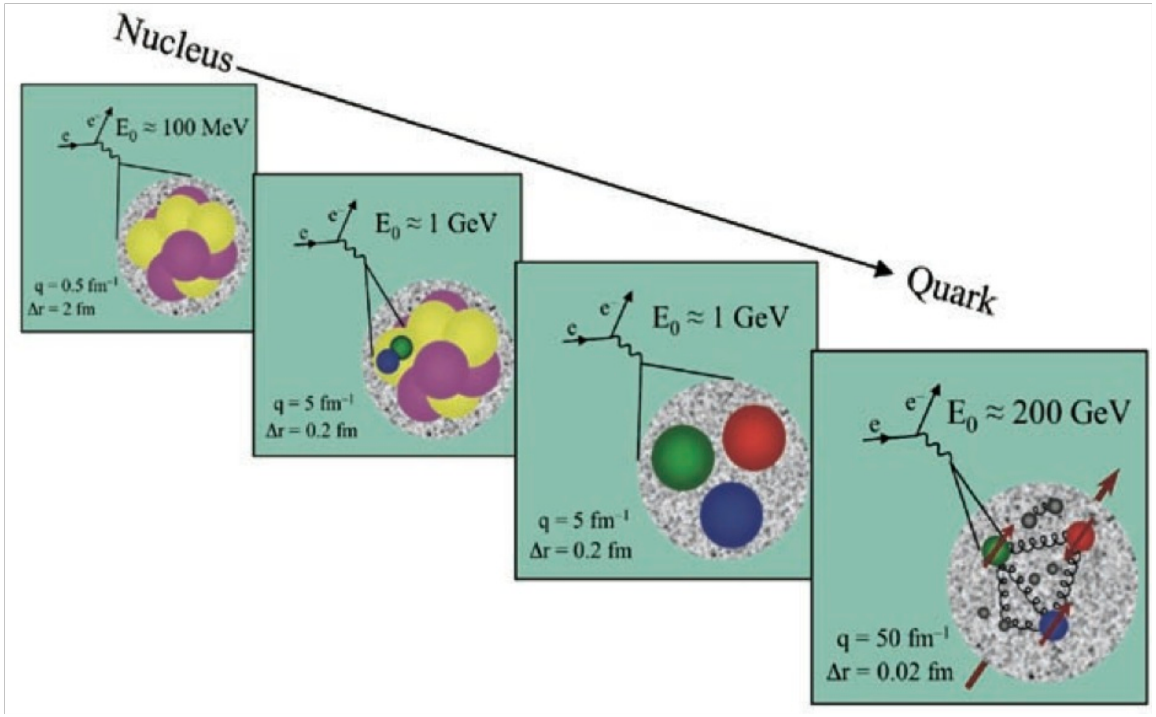




45 Academics at 9 Institutions (Birmingham, Brighton, Edinburgh, Liverpool, Manchester, STFC Daresbury Laboratory, Surrey, UWS, York)

NUCLEAR STRUCTURE & NUCLEAR ASTROPHYSICS

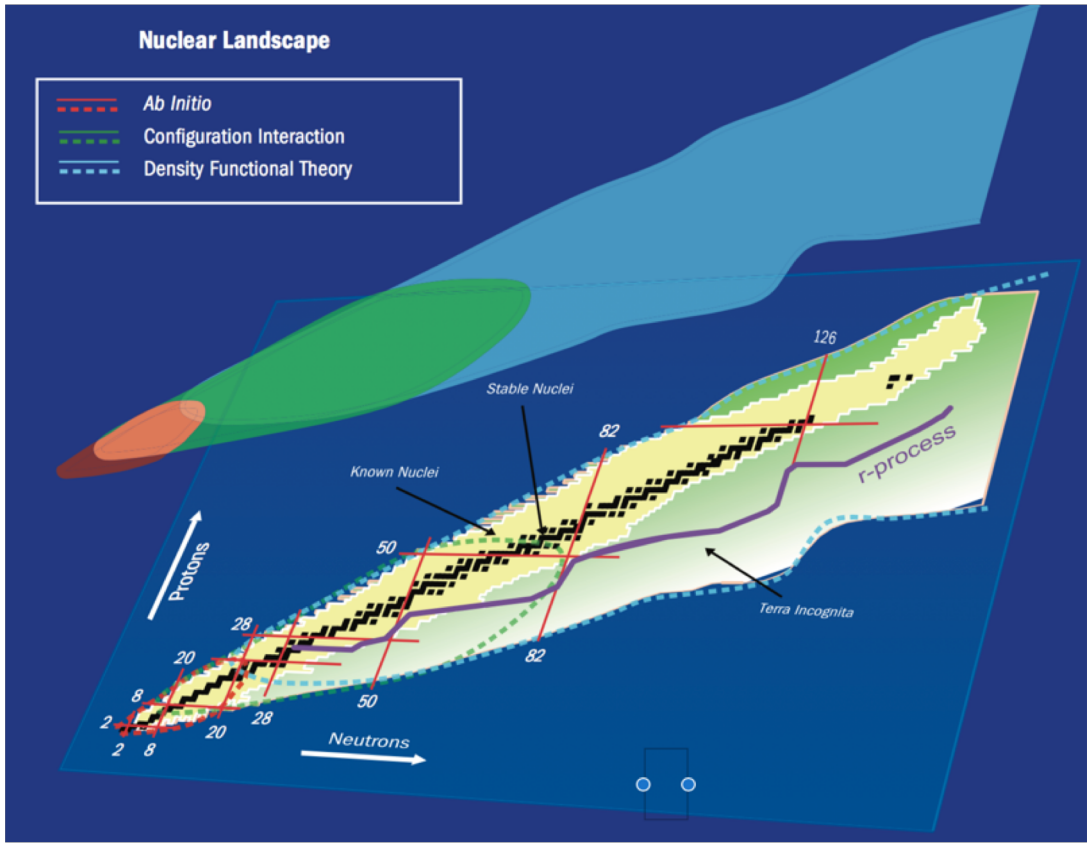
The Mystery of Creation to the Limits of Existence



13 Academics at 6 Institutions (Birmingham, Derby, York, Glasgow, Liverpool, STFC Daresbury Laboratory)

HADRONIC PHYSICS

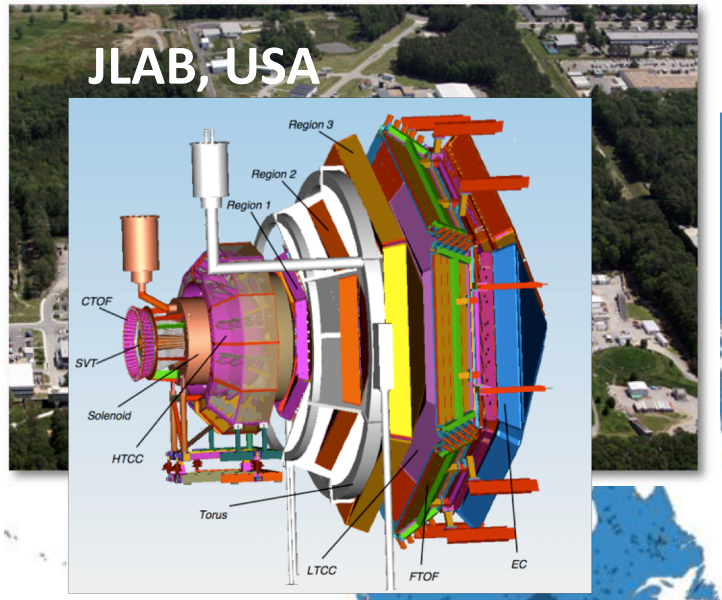
Matter at the Fundamental Scale

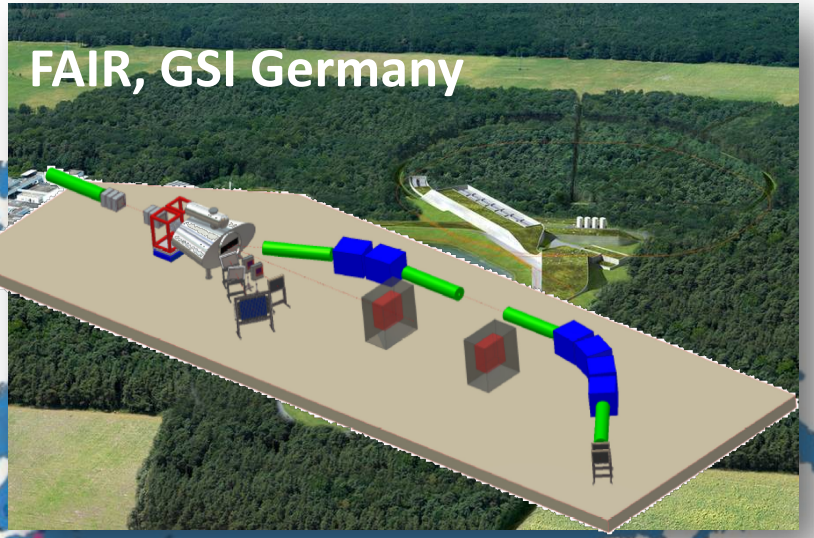


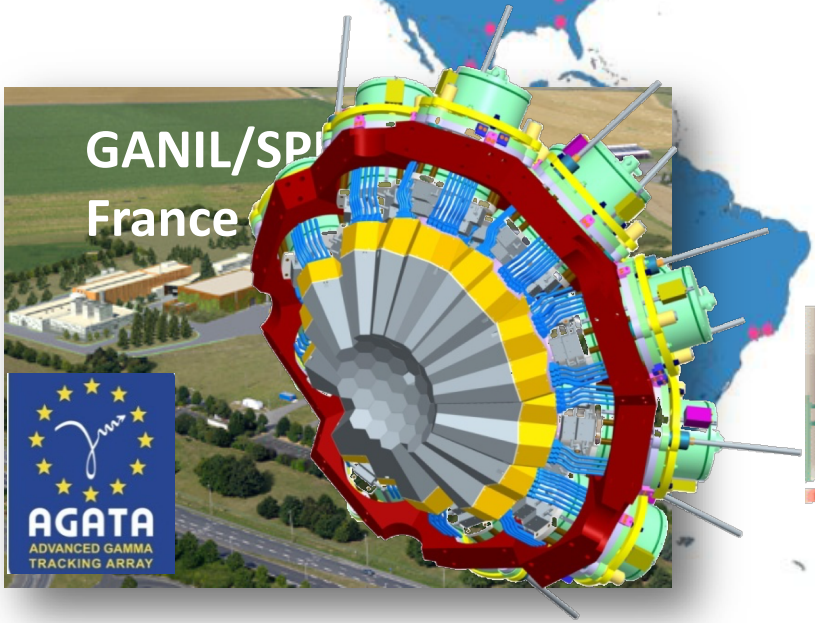
10 Academics at 3 Institutions (Manchester, York, and Surrey)

NUCLEAR THEORY

Nuclear Physics Projects



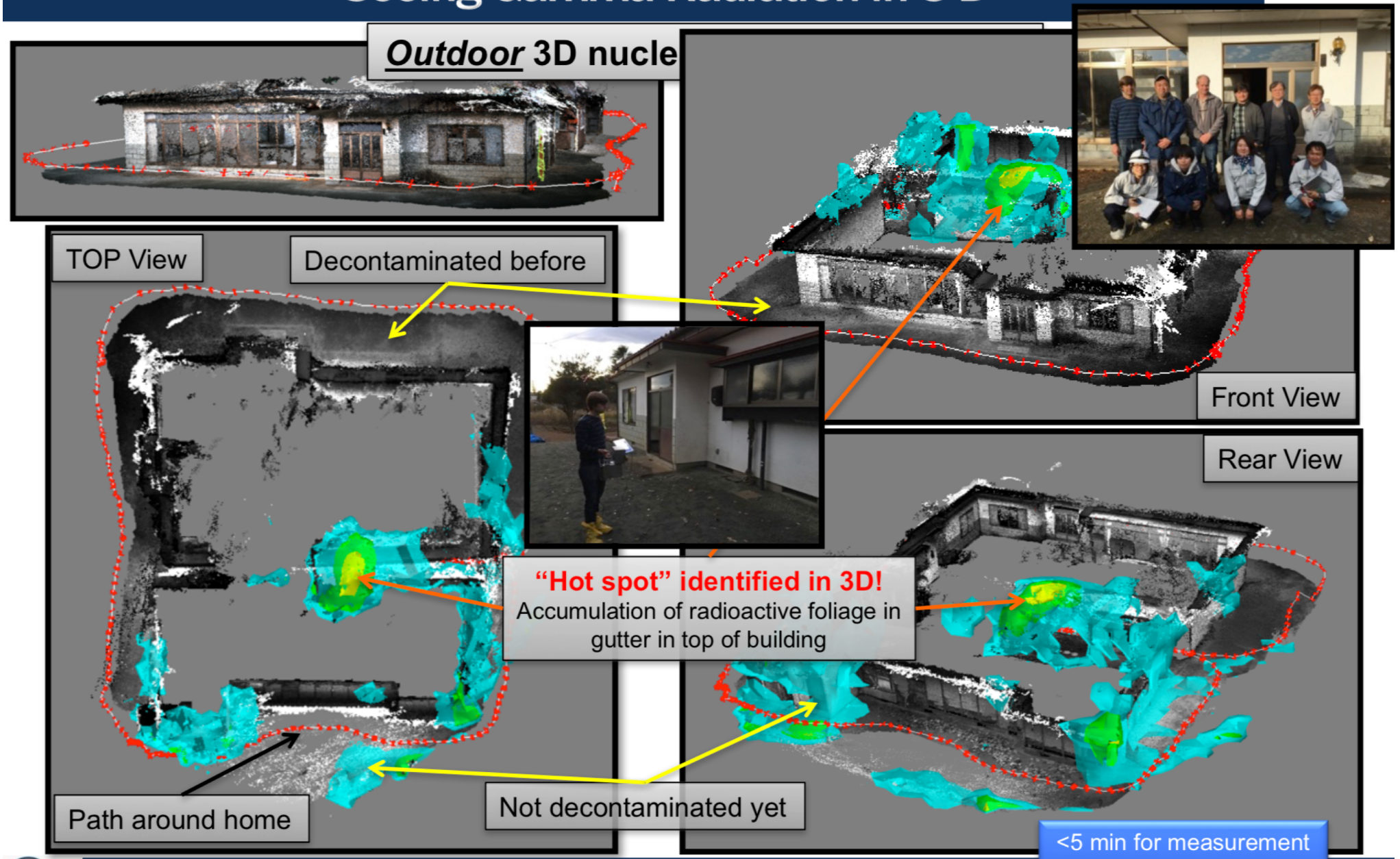




Key technologies and technology development

- Miniaturisation of discrete readout electronics (JFET based PAs) for germanium detectors. CMOS readout. Germanium ASIC and associated mounting of the digital processing chain on the detector.
- MAPS (DMAPS)
- Photo-sensors with sub-picosecond timing resolution
- SiPM (position sensing)
- Key engineering and design support

Contamination Map of Evacuated Home in Fukushima
"Seeing Gamma Radiation in 3-D"



Presentation of the Long Range Plan 2017 of NuPECC

Perspectives in Nuclear Science and its application

Angela Bracco

UK Nuclear Physics

Next community meeting 7 – 8th Jan 2019