

Aq, Ba, Bo, CNAF, Ct, Fe, Fi, LNF, LNGS, LNL, LNS,
MiB, Na, Rm2, Rm3, TIFPA, To

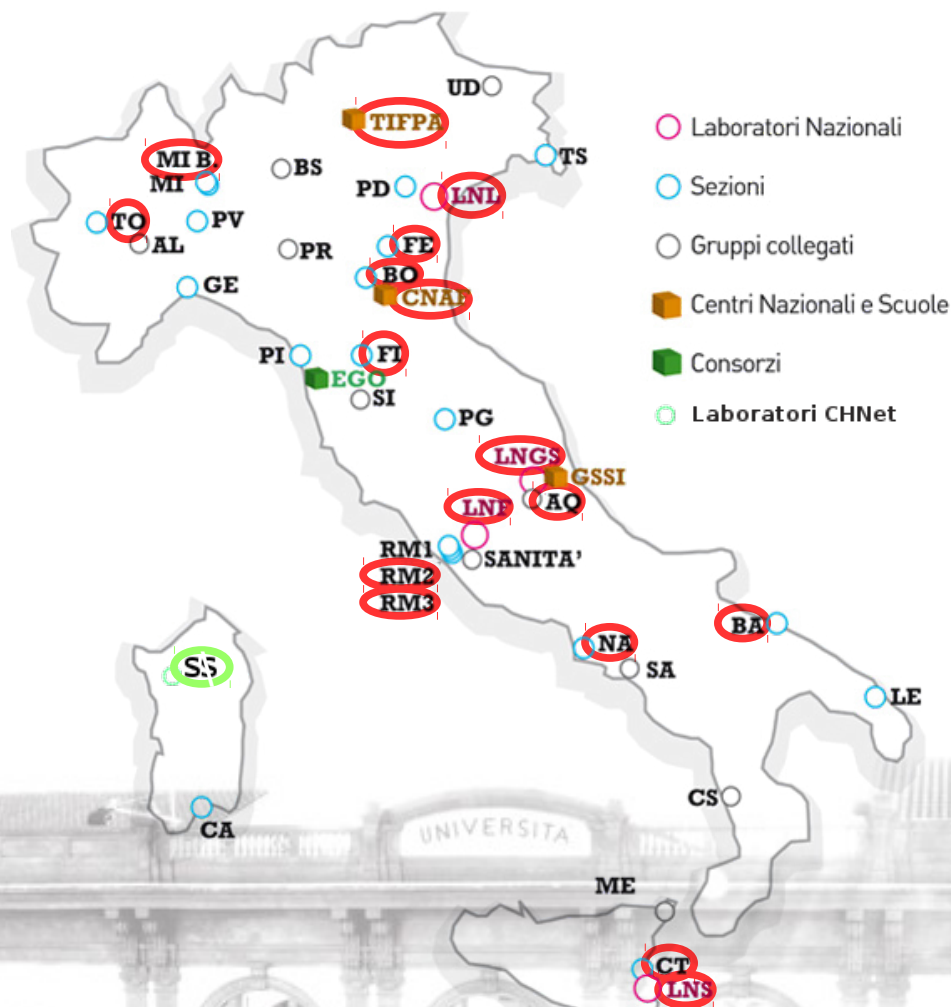
Esperimenti CHNet in CSNV: proposte nuove e prosecuzione

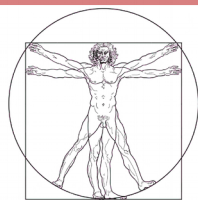
CHNet_Imaging

CHNet_Lilliput

CHNet_Tandem

Redsox2

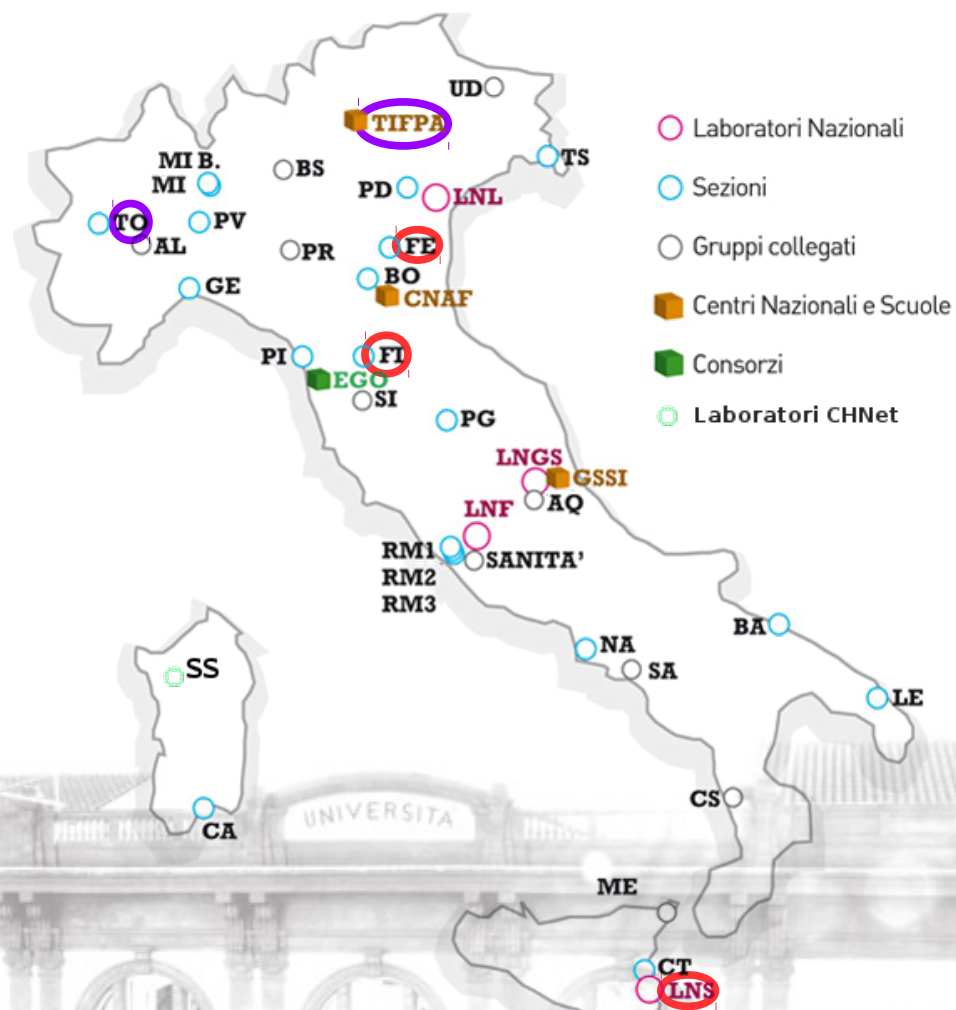
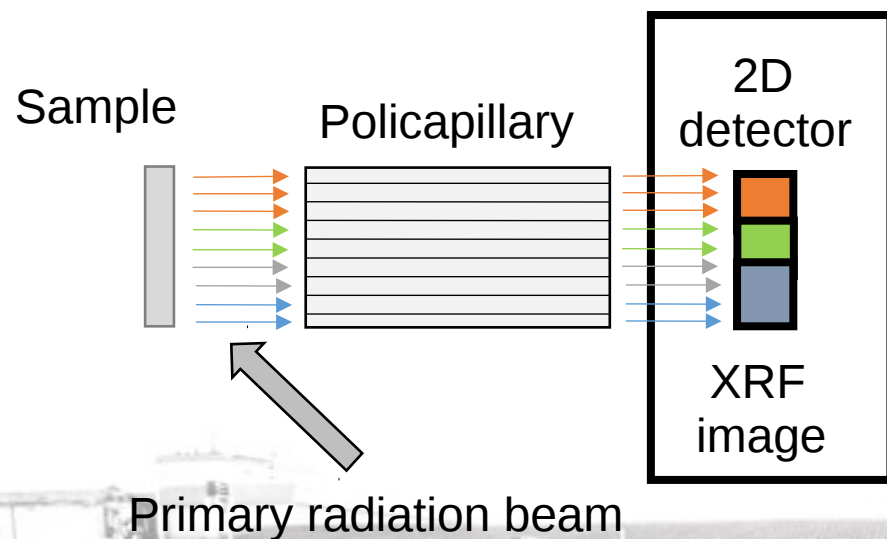




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Esperimenti: CHNet_Imaging – in prosecuzione

PIXE-FF-XRF



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CHNet_Imaging - in prosecuzione

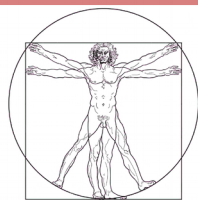
C++ to construct the acquisition code and the motion routines;
Qt and Qwt, to implement the GUI interface.

high computational cost reduction (with respect to XRF scanner ACQ program) achieved
by dividing the acquisition software into two independent packages, one for data
acquisition and one for data analysis

2-detector XRF ACQ (but easily expandible up to 8 detectors) based on the standard
XRF hardware elements (CAEN digitizer for ACQ and PI multistage motors for scanning)
implemented

wide area PIXE imaging on the accelerator beam-line demonstrated

2-detector wide-area PIXE acquisition and imaging on the way
tools used to develop multi-detector elemental mapping software



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CHNet_Imaging - in prosecuzione (2017)

Per il 2017:

Proposta per le attività rimodulate a budget costante

In particolare è stata proposta la realizzazione di uno scanner misto a fluorescenza e diffrazione (XRF/XRD)

Firenze dovrebbe seguire la parte di elettronica di lettura e software.

Fte invariati ()

Ancora in fase di definizione

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CHNet_Lilliput - proposta

Linea datazioni

WP2

Preparazione
dei campioni

2.1 Set-up nuove camere di
grafitizzazione

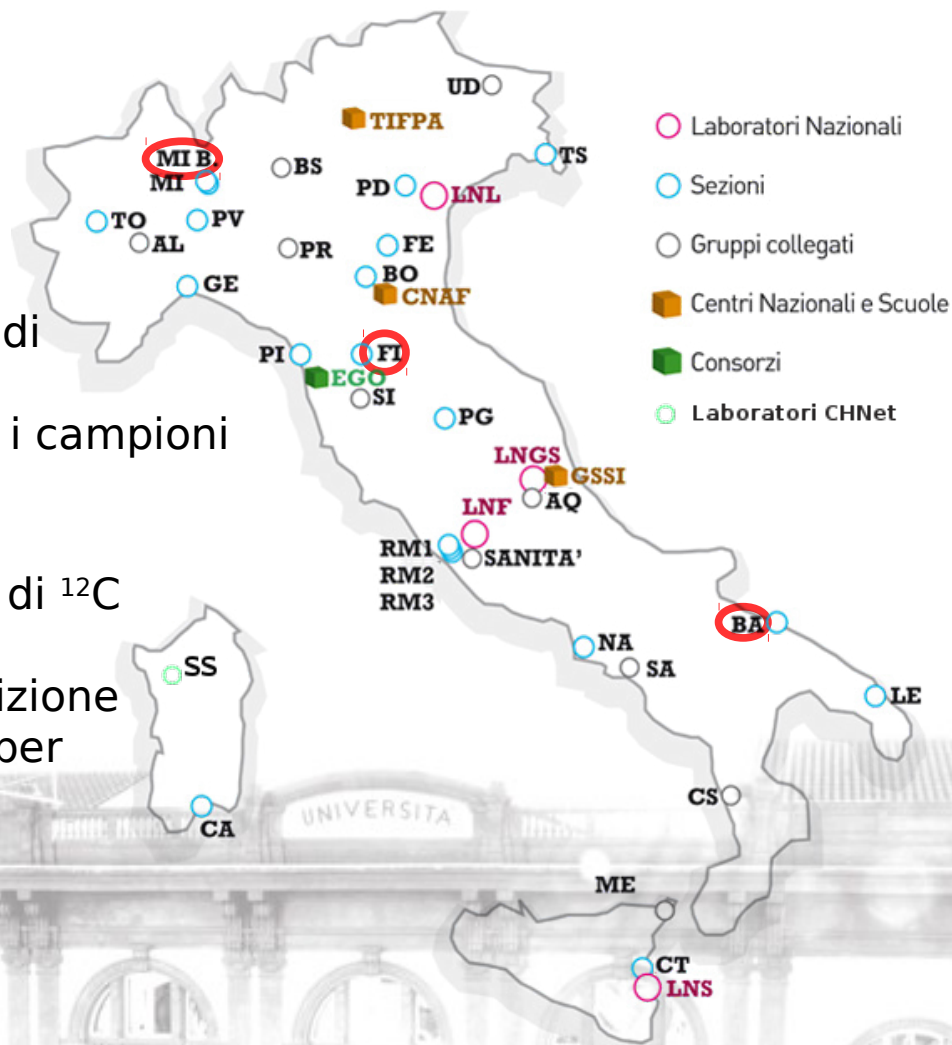
2.2 Design nuovi supporti i campioni
in sorgente

WP3

Upgrade
dell'accelerato
re

3.1 Upgrade sensibilità FC di ^{12}C
e ^{13}C

3.2 Sviluppo nuova acquisizione
integrazione con software per
l'analisi dei dati



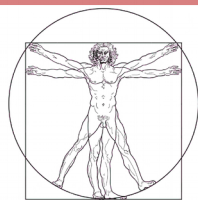
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Redsox2 – in prosecuzione

Sotto dtz5:

- rivelatori con basso rumore a temperatura ambiente (130/140eV)
- di lettura utilizzabili su sistemi mobili

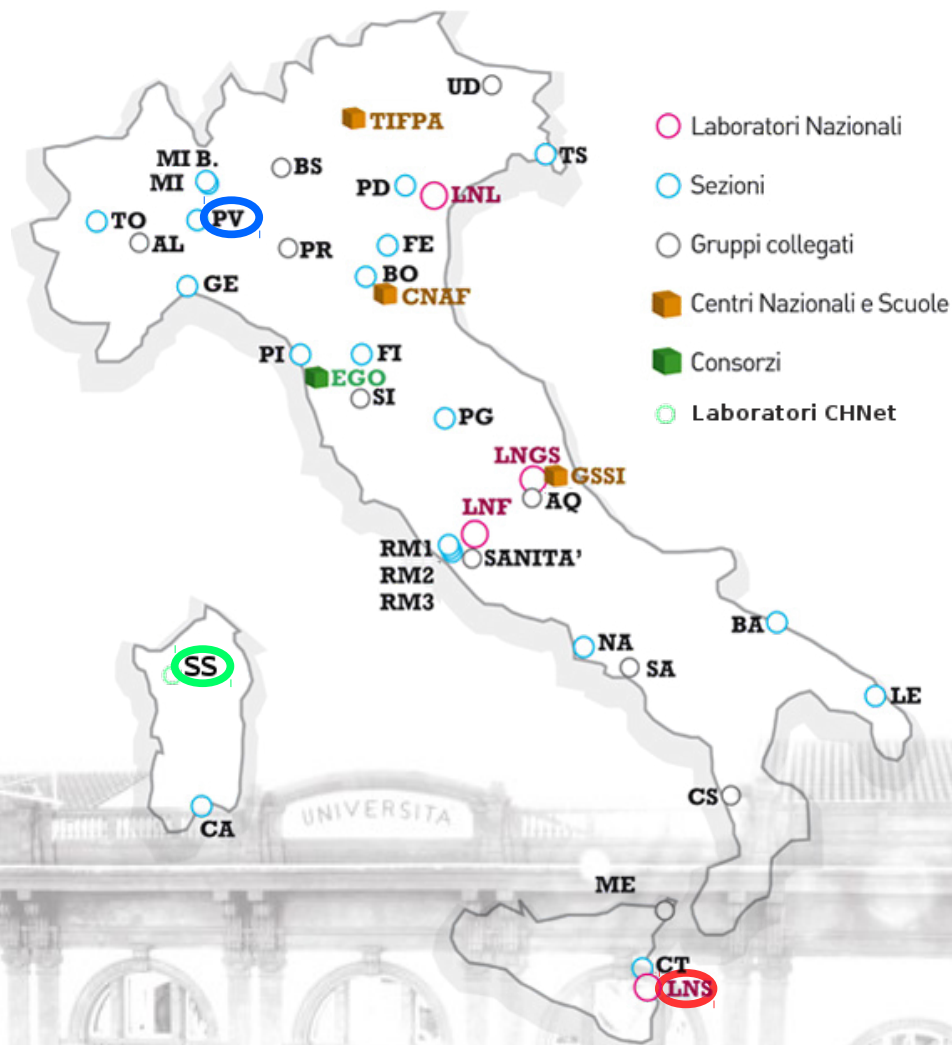
Firenze per il futuro farà *solo* i test in (in Opificio delle Pietre Dure)

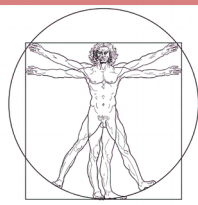


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CHNet_Tandem - proposta

**Tecniche Analitiche Non Distruttive per
l'archEoMetria**





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CHNet_Tandem - proposta

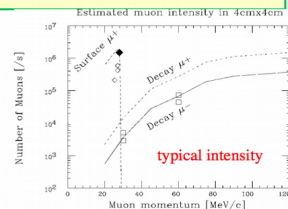
OBIETTIVO

L'idea che sta alla base della proposta di esperimento **TANDEM** è quella di implementare, sviluppare e ottimizzare nuove tecniche di analisi non invasive e non distruttive da utilizzarsi in ambito archeometrico per la caratterizzazione elementale di manufatti

Muon Beam at RIKEN-RAL

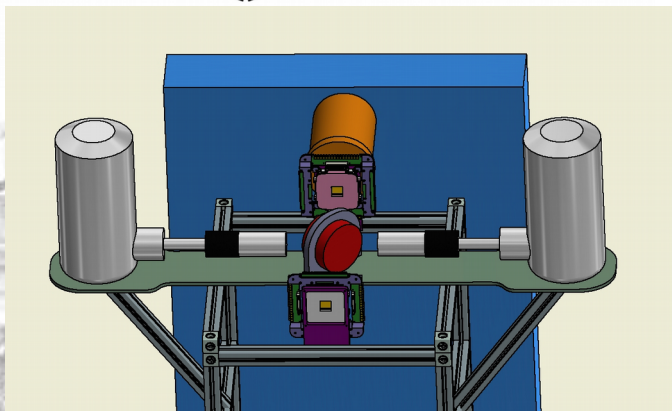
Beam properties

surface μ^+ (20~30 MeV/c) and
decay μ^+/μ^- (20~120 MeV/c)
typical beam size 10 cm²
 $\Delta p/p$ FWHM 10% (decay), 5% (surface)
Double pulse structure
(Choice of single pulse
with magnetic kicker (<30 MeV/c))
Operation
160 days/y of ISIS beam time
~40 days for UK
~120 days for RIKEN



peak to peak
320 ps

RIKEN-RAL Muon



In particolare si
vorrebbero
implementare due
tecniche:

la **Spettroscopia
Muonica**
(RIKEN-RAL)
e
la **Gamma Prompt**
(LENA Unipv)

- Thermal beam filtering with Bi and single crystal sapphire
- Beam flux : $\approx 1.3 \cdot 10^7$ n/(cm²s)
- Beam size: ≈ 3 cm Ø
- Detection system : HPGe N type coaxial configuration
- Sensitivity for natural boron 1000 cps/mg
- Sensitivity for other elements to be assessed

