AGATA WS thechical information to prepare the LoI

The present document is a guide line for the preparation of the AGATA WS at LNL in March 25th and 26th 2019. AGATA will be coupled @LNL to a series of complementary detectors that will allow to perform a broad physics program.

Stable beams from TANDEM and TANDEM-ALPI-PIAVE will be available up to ^{208}Pb.
See the web page: http://www.lnl.infn.it/~tandem/tandem_piave_alpi_beams_b.htm and http://www.lnl.infn.it/~ssi/Ion_Beams.htm

AGATA Efficiency

Nominal and compact positon position (-10 cm) at 1,3 MeV considering a reaction chamber of Al 4 mm.

Start of the camapign with 20TC. By the end of the campaign with 30TC.

Configuration	Nominal position	Compact position
20TC	8.8%	13.9%
30TC	13.6%	19.0%

Complementary detectors

- PRISMA vacuum mode, angular coverage 80 msr, from Theta=20º to 100º.
- EUCLIDES silicon det. (with beam absorbers) Eff_p = 60% Eff_alpha = 25%
- EUCLIDES plunger configuration (with beam absorbers) Eff_p = 25% Eff_alpha = 15%
- TRACE highly-segmented silicon det. (up to four modules) E-DE with PSA for light charged particles at least up to Oxygen - 22 degrees angular coverage each.
- Plunger (grazing and zero degrees configuration): range 7 micrometers to 1.2 cm
- LaBr (3''x3'') 10 detectors Eff (1.3 MeV) = 2.3%
- LaBr (3.5''x8'') 10 detectors Eff (1.3 MeV) = 3%
- NEDA Eff_1n = 27% Eff_2n = 2.8%
- SPIDER Coulex detector backward angles, angular coverage 124-165 degrees
- PARIS 8 clusters – Efficiency curve attached.
- Mini-orange Si-Li: resolution ~3-4KeV @1MeV, efficiency about 16% in the range of 800-2500 keV. Efficiency at lower energy (200-800 keV)10% (estimated).
- Recoil Filter Detector: 18 HI detectors, efficiency 20-50 % depending on the reaction, TOF determination of evaporation residua (required pulsed beam as a time reference), variable distance from the target (1m-1,50m), theta angular coverage 2-7 deg. (at 1,3m from the target).