

Titolo del progetto:	Study of the CLYC scintillator as a fast neutron spectrometer
Esperimento/sigla proponente	GAMMA
Laboratorio ospitante	LNL
Contact person presso il laboratorio	Andrea Gottardo
Periodo previsto:	Maggio-Ottobre 2021
Sezioni e tutor proponenti :	INFN LNL, Andrea Gottardo, José Javier Valiente Dobon
Descrizione attività (max 1000 caratteri)	The student will work with the new CLYC scintillator and study its viability as a fast (100 keV - 5 MeV) neutron spectrometer using the output signal amplitude. He will work at LNL with neutron sources like AmBe and 252Cf and/or mono-energetic neutrons beams from the CN accelerator to optimize the algorithms for pulse-shape neutron/gamma discrimination with digital electronics, in particular at low neutron energies (<500 keV). He will also investigate the neutron energy resolution which could be achieved with CLYC scintillators in comparison with the standard time-of-flight technique by studying the better digital treatment of the signal (trapezoidal filters). The studying of the CLYC scintillator response function will allow one to measure complex neutron spectra, like the one from spontaneous fission, by deconvoluting the experimental energy emission distribution. This work will pave the way for the future use of the CLYC scintillators in the beta-delayed neutron spectroscopy of exotic beams and other applications.
Altre indicazioni: (max 500 caratteri)	
Facility che il laboratorio ospitante mette a disposizione	Mensa-foresteria se c'è la possibilità
Note:	<u>L'esperienza svolta presso il laboratorio ospitante può essere parte integrante della attività richiesta per un progetto di tesi magistrale.</u>

