

The scientific topics are the following:

1. **NOVEL APPROACHES IN EARTHQUAKES SCIENCE; FROM THE FIELD OBSERVATIONS TO THE MODELLING OF THE RESULTS.** Crustal faults are complex natural systems whose mechanical properties evolve over time thus the understanding of the multi-scale, physical/chemical processes responsible for earthquakes and faulting requires considering phenomena that intersect different research fields, modelled with innovative techniques. We support projects grounded on small- to large-scale seismically active fault systems, focussed on the understanding of the role of the most different parameters, in the earthquakes preparatory phase and deformation processes.

2. **NEW APPROACH FOR SEISMIC HAZARD ANALYSIS AND EARTHQUAKE DAMAGE SCENARIOS.** The definition of a new generation of time-dependent and deterministic seismic hazard evaluation procedures has the ambitious outcome of developing tools for predicting the time-space seismic sequences evolution, and the related ground-motion level, useful for the implementation of advanced integrated strategy for seismic risk reduction and disaster planning. We support project that integrate the simulation of complex earthquake source and wave radiation processes with the aim to get reliable predictions of the variability of the strong ground motion around the causative fault system and a more accurate estimate of the expected distributions of engineering parameters in relation to the possible spectrum of earthquakes that may cause damages in the areas of interest.

These two Ph.D programs will be supervised by professors and researchers of both UNICAM and INGV.

For further information on applying for Ph.D, please see the following web site:
<https://isas.unicam.it/school/2018-call-admission-doctoral-degree-programs-second-session>