Doctoral Programme – XXXVI Cycle
"EARTHQUAKE AND ENVIRONMENTAL HAZARDS"
University "G. d'Annunzio"
2020-2021

Ph.D Student: **Carlo Andrenacci**

Contact: **carlo.andrenacci@unich.it**

Date of birth: 26/08/1989

City of birth: Chieti (ITALY)

2017 - Bachelor's degree *cum laude* in: *Geological Sciences*
"CO2 flux measurements from recent sediments deposited at North of the Pescara river mouth"

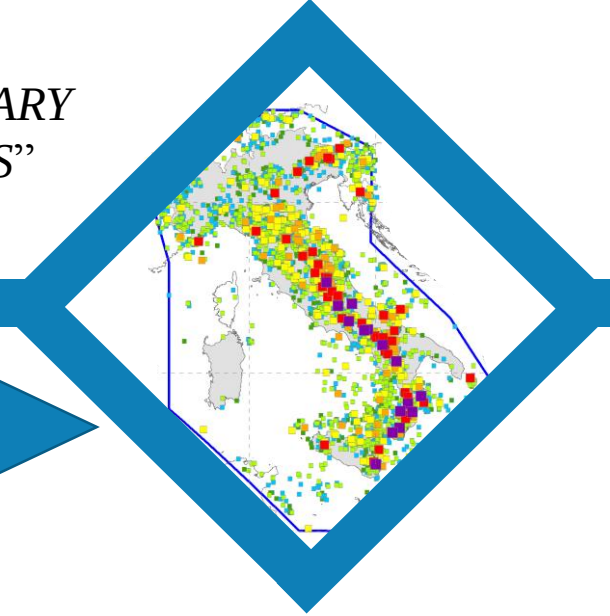
2019 - Scholarship fellow: "Dissemination of the scientific activities of the Interuniversity Center for Seismotectonics at the Ud'A (CRUST) through the maintenance of a website and dedicated social networks"

2020 - Master's degree *cum laude* in: *Geological Sciences and Technologies of the Earth and Planets*
"Evaluation and processing of kinematic classifications functional to the integration of seismological and geological-structural data in active tectonic contexts"

RESEARCH PROJECT

"NUMERICAL SEISMOTECTONICS MODELLING – A 3D MULTI SCALE INTER-DISCIPLINARY APPROACH TO ACTIVE DEFORMATION IN INTRA-CONTINENTAL TECTONIC SETTINGS"

Tutor: *prof.ssa G. Lavecchia* **Co-Tutor:** *dott. Raffaele Castaldo (IREA – CNR)*



Stress Model

describes stress variation along the fault by identifying critical points and comparing it with the seismicity recorded in the area.

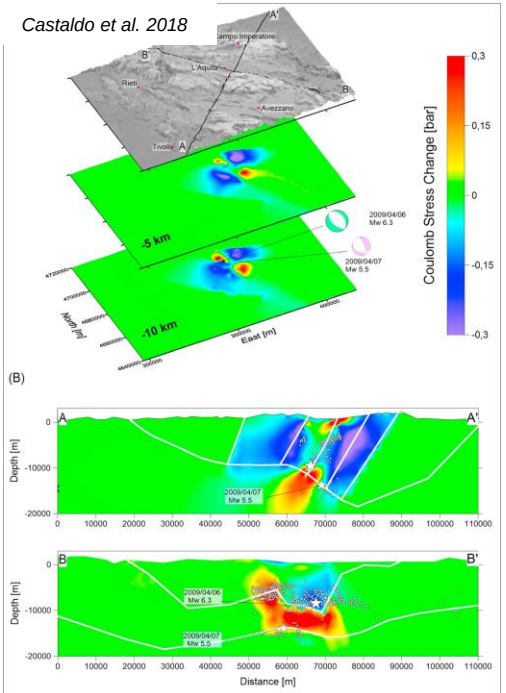
Volumetric Strain Model

describes how the rock volume reacts in terms of compression (blue) and distension (red).

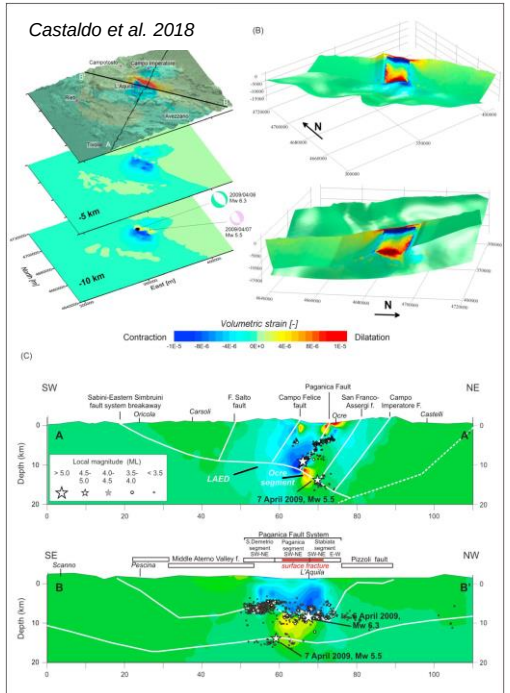
Kinematic Model on fault

the application of three-dimensional stresses on the fault produces potential kinematic vectors that indicate the sense and magnitude of the dislocation along the surface.

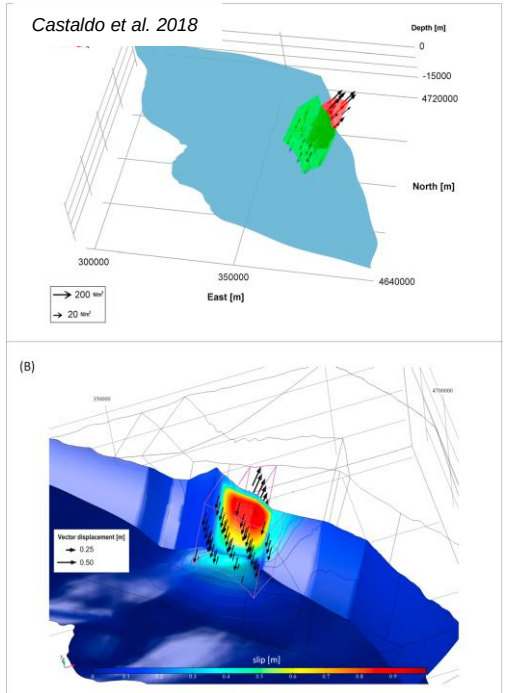
Castaldo et al. 2018

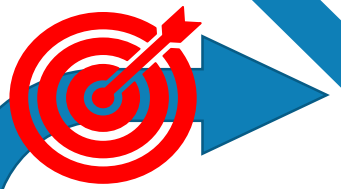


Castaldo et al. 2018



Castaldo et al. 2018





3rd YEAR → **Development of a database of numerical 3D-models of the Southern Italy active faults.**

2nd YEAR → **Skills implementation. Reproduction preliminary models.**

1st YEAR → **Bibliographic study. Development of an integrated database.**