



## VIEW

[Abstract](#)[Citations](#)[References](#)[Co-Reads](#)[Similar Papers](#)[Volume Content](#)[Graphics](#)[Metrics](#)[Export Citation](#)

## FEEDBACK

## Sedimentary record and the late - Quaternary tectonics of the "Livorno-Empoli Fault" (Northern Tuscany, Italy)

[Show affiliations](#)[Sarti, Giovanni](#) ; [Gerardo Giannico, Vito](#) ; [Pittaro, Daniele](#) ; [Porta, Lorenzo](#) ; [Molli, Giancarlo](#)

The "Livorno-Empoli" fault represents the westernmost segment of one a major transversal structure of the inner Northern Apennines the so-called "Livorno-Sillaro Line" a regional structure described in the literature, for a long time (e.g., Ghelardoni, 1967; Bortolotti, 1966; Bernini et al., 1991; Cantini et al., 2001; Pascucci et al., 2007; Rosenbaum, Agostinetti, 2015). In the frame of our ongoing studies, in this contribution, we will focus on the short term history of this regional fault. A new stratigraphic-sequence frame for the late-Quaternary deposits has been developed by using the different facies associations as defined through a large surface database analysis. Moreover, a correlation has been done between subsoil deposits and the outcropping sediments on the hilly areas (Livorno, Pisa, and Cerbaie hills) surrounding the Arno valley. Additionally, a morphotectonic analysis of the hydrographic networks and relief distribution has been done the Lidar data (DTM), supplied by the Tuscany Region, at the 2 m and 10 m of resolution. Specifically, the river system is particularly sensitive to deformation processes. The fluvial streams are in fact characterized by low geomorphological inertia and, therefore, by response times of a few hundred thousand years to the tectonic processes ongoing. As a result of the integrated multidisciplinary analysis, it was possible to highlight the evidence of middle Pleistocene-Holocene tectonics of the "Livorno-Empoli Fault" until now neglected by the literature. References Ghelardoni, R. (1967) Osservazioni sulla tettonica trasversale dell'Appennino Settentrionale. Bollettino della Societa Geologica Italiana, 84, 1-14. Bortolotti V. (1966) - La tettonica trasversale dell'Appennino - La linea Livorno-Sillaro. Bollettino della Società Geologica Italiana, Vol.85, pp. 529-540, 3 ff., 1 tav. Bernini, M., Boccaletti, M., Moratti, G., Papani, G., Sani, F., & Torelli, L. (1991). Episodi compressivi neogenico-quaternari nell'area estensionale tirrenica. Dati in mare e a terra. Memorie della Società Geologica Italiana 1990, 45, 577-589. Cantini P., Testa G., Zanchetta G. & Cavallini R. The Plio-Pleistocene evolution of extensional tectonics in northern Tuscany, as constrained by new gravimetric data from the Montecarlo Basin (lower Arno Valley, Italy). Tectonophysics, 2001, 330, 25-43. Pascucci V.; Martini I.P.; Sagri M.; Sandrelli F. Effects of transverse structural lineaments on the Neogene-Quaternary basins of Tuscany (inner Northern Apennines, Italy). Sedimentary Processes, Environments and Basins: A Tribute to Peter Friend, 2007, Rosenbaum, G.; Agostinetti., N.P. (2015). Crustal and upper mantle responses to lithospheric segmentation in the northern Apennines. Tectonics, 34, 648-661, doi:10.1002/2013TC003498.

**Publication:** vEGU21, the 23rd EGU General Assembly, held online 19-30 April, 2021, id.EGU21-8433**Pub Date:** April 2021**Bibcode:** [2021EGUGA..23.8433S](#) ?

Feedback/Corrections?

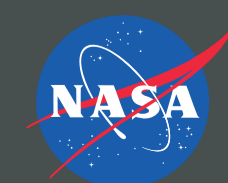
## FULL TEXT SOURCES

| [Publisher](#)

© The SAO/NASA Astrophysics Data System

✉ [adshelp\[at\]cfa.harvard.edu](mailto:adshelp[at]cfa.harvard.edu)

The ADS is operated by the Smithsonian Astrophysical Observatory under NASA Cooperative Agreement *80NSSC21M0056*



CENTER FOR  
ASTROPHYSICS  
HARVARD & SMITHSONIAN

## Resources

[? About ADS](#)[i ADS Help](#)[📣 What's New](#)[👥 Careers@ADS](#)[♿ Accessibility](#)

## Social

[🐦 @adsabs](#)[📖 ADS Blog](#)

## Project

[Switch to basic HTML](#)[Privacy Policy](#)[Terms of Use](#)[Smithsonian Astrophysical Observatory](#)[Smithsonian Institution](#)[NASA](#)