1. Research activity (max 1.000 words)

Fluvial deposits and forms are useful to unravel past hydro-morphological conditions at different spatiotemporal scales. Many studies describe the impact of climatic change on fluvial systems during Quaternary [e.g. BULL, 1991; BRIDGLAND e WESTAWAY, 2008; MACKLIN et al., 2012;]. Analyses of lake and marine sediments, glacial and speleothem cores, and tree-rings contributed to identify the Bond Events and other late Quaternary high frequency, low magnitude climate events (e.g. Dryas, LIA…); however, the effects of these events on the fluvial morphodynamics are still object of study for the Mediterranean and Mid-East areas (e.g. within the Italian Apennines and Mesopotamian Plain in Iraq).

Different approaches should be adopted to detect, at different spatial scales landforms, processes and their changes over time, i.e. remote sensing (satellite optical and interferometric imagery), field works, laboratory analysis of fluvial sediments and geomorphometry in GIS environment.

The fluvial archives of the last glacial cycle and post glacial cut-and-fill phases are well recognizable; therefore, they can be very useful to study the impact of high frequency – low magnitude climate change at both local and regional scale.

During the Early and Middle Holocene, the human impact on fluvial systems has been minimal within the western Mediterranean area. On the contrary, in the eastern Mediterranean and Near-East, within the Mesopotamian Plain, the human impact on fluvial systems should be considered. The latter area, in fact, was the cradle of civilization, where the Akkadian, Sumer and Babylonian Empires modified the natural river pattern building canals. Hence, the Mesopotamian Plain is useful to appreciate the possible feedbacks between human distribution and climate changes. The paleo-environmental reconstruction of the Nigin - Tell Zurghul area (Iraq), where the Italian Archaeological Mission chaired by researches belonging to the Department of Ancient Science of the Sapienza University is working since 2014, should be relevant to delineate the feedbacks mentioned above.

The study of the effects of the Holocene climate changes (last 10 ka) is fundamental to quantify the sensitivity of river processes to minor climatic changes, that will be useful for the mitigation of risk connected to the ongoing and future climate change, for sustainable management of hydraulic resources and to understand the social resilience of human being to the climate variability.

2. Research products

a) Publications (ISI journals)

b) Publications (NON ISI journals)

c) Manuscripts (submitted, in press)

d) Abstracts

- **Giulia Iacobucci, Francesco Troiani, Marta Della Seta, Mario Valiante, Carlo Esposito, Salvatore Martino, and Francesca Bozzano**. Unravelling the style and timing of slope-to-channel system morphoevolution in tectonically active landscapes: new insights from the Northern Apennines of Italy. Geophysical Research Abstracts Vol. 20, EGU2018-4398, 2018. EGU General Assembly 2018