

## **A tridimensional reconstruction of the Forenza-Venosa Basin (Southern Italy)**

Maria Chiara Tartarello and Sabina Bigi

Department of Earth Science, Università di Roma "Sapienza", Rome, Italy (mariachiara.tartarello@uniroma1.it)

The study area comprises a sector of the Southern Apennine thrust front and of the close foreland (Bradanic Foredeep). In this area Plio-Pleistocene continental deposits extensively crops out whereas the chain is represented by the Miocenic turbidites and the Allochthonous. The substratum is known only in exploration wells logs: it is represented by Jurassic - Miocene carbonate successions, composed by: Jurassic limestones and dolomites (Dolomitic Complex of Murge), Cretaceous limestones of Cupello Fm., Eocene to Miocene calcareous breccias with intercalation of basaltic layer of Lavello Breccias.

Several seismic lines, isochrones maps and wells logs have been used to reconstruct the 3D model of the Forenza-Venosa Basin. It is characterized by the occurrence of Pre-Pliocene normal faults, that offset the carbonate complex with an horst and graben structure. The main regional normal fault has a NW-SE trend and a displacement of about 700 ms; this fault appears to be dislocated by an E-W transfer fault. In the inner part of the area, it is clearly visible the thrust of the chaotic complex (Allochthonous Fm.) onto the foredeep deposits. The foredeep, filled by the Plio-Pleistocene deposits, has an NW-SE elongated geometry and only few kilometers of amplitude.

The occurrence of pre Pliocene normal fault can be connected to the flexure of the Apulian platform during the Apennines evolution; the age of these faults can be considered as active during the Upper Miocene, as testified by the Miocene syn-sedimentary deposits, clearly visible in the seismic line, showing strong thickness variation. The low angle thrust plane placed the Allochthonous Fm. on the Early Pliocene sequence, testify the migration of the compressional front of the chain after Early Pliocene. Even the E-verge folds involving the carbonate succession can be referred to this younger contractional phase. The folding affects also the Pliocene sequence, with a gentle bending in the northern part of the foredeep basin.