The earliest detected deformation occurs just SW from the Thrace basin, in the Gelibolu peninsula, along the shore of the Aegean Sea. Folding and faulting of Palaeocene to early Eocene sequence was associated with very low-grade metamorphism. Middle Eocene succession seals the deformation features.

Small-scale syn-sedimetary structures (sedimentary dykes and faults) indicate NE-SW to E-W extension along the NE margin of the basin in the Bartonian to Priabonian. Gradual tilting of the beds could occur in map-scale tilted blocks of extensional origin. The repeated normal faulting is deduced from fractures which formed before, during and after the tilting. This deformation process is reflected by progressive transgression on basin margin and intra-basin block margin.

Extensional fractures were also observed in Eocene sequence near the SW margin, in the Ganos Mountains. The age of faulting is not precisely constrained but pre-dates the latest Oligocene – early Miocene folding and related uplift.

All data on early deformation phases point to extensional deformation along both the north-eastern and south-western margin of the basin. Regional geodynamic considerations would agree with fore-arc origin of the Thrace basin.

Before the folding in the Ganos Mountain a strike-slip type deformation occurred during the Late Oligocene - Early Miocene. The E-W compression could induce dextral faulting along the ENE trending southern margin of the Ganos Mountain, the Ganos fault, a precursor of the North Anatolian Fault. This confirms the suggestion that dextral faulting parallel to the NAF could be active already in the late Oligocene-early Miocene.

The large-scale folding itself occurred in a slightly different stress field, in NNW-SSE compression. Progressive fracturing and folding happened in a coaxial deformation process. The folding and related uplift is constrained by fission track data as ~16 Ma.

Post-early Miocene deformation history can be detected south from the Ganos fault, in the Sarköy area. Before the tilting of mid- to late Miocene sediments, a peculiar stress field with SE-NW extension and NNE-SSW compression occurred. This deformation was already observed, but its geodynamic interpretation is not clear. Strike-slip type deformation with E-W to NW-SE compression is connected to dextral faulting and folding (transpression) along the Ganos segment of the North Anatolian Fault. This is in agreement with Pliocene-Quaternary dextral faulting along the North Anatolian Fault. A slight change in compression direction can be suspected during the progressive deformation; this non-coaxial character can also be connected to strike-slip faulting.

Study of a mesoscale convective complex over Western and Southern Balkans

Foris D.

Meteorological Applications Centre, Hellenic Agricultural Insurance Organization, Macedonia Airport, 55103, Thessaloniki, Greece, d.foris@elga.gr

The purpose of this study is to thoroughly examine the conditions leading to the development of a mesoscale convective complex (MCC) on 24 May 2009 that affected the western and southern Balkan Peninsula, its features and the manifestation of its activity at the surface. To this end, data from a variety of sources were used, such as weather maps, surface records and upper-air soundings, a hailpad network, satellite, lightning, precipitation and radar data. First, the evolution of the system was described, in terms of the track, timing, and areal extent. Second, the synoptic and thermodynamic environment that favored its development was studied. Special features at the surface, such as a cold pool and a mesohigh, were documented by surface observations. Finally, successive satellite, lightning and radar imagery revealed the organization of the system. All data together document well the categorization of this system as an MCC.