matics of the area is important. Interplay between these settings is obvious, but until now poorly understood. There is for instance an apparent contrast between the S–N compressional stress regime suggested by earthquake studies and the generally accepted predominance of normal fault at the earth's surface. Also the timing, kinematics as well as the stress regime under which this occurred is poorly known. Goal of this study is to come to an integrated reconstructing of the uplift/erosion history of the area. To do so, we will apply (U–Th)/He thermochronometry on apatites in combination with structural, stratigraphical and morphological field studies.

Structural and stratigraphical analyses of the Ventimiglia (NW Italy) area resulted in the recognition of at least two stages of deformation. Combined with the (U–Th)/He thermochronometry data, this will add new kinematic constraints to the recent evolution of the Ligurian–Provençal area.

Foreland basin evolution around the Western Alpine Arc

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Comparison of Tertiary depocentres in SE France with the North Alpine Foreland Basin (NAFB) provides new insight into the evolution of the arcuate western Alpine orogen. These foreland stratigraphies show that a continuous flexural basin developed from the mid to late Eocene on the European plate. The stratigraphy of this underfilled foreland basin is recognisable and consistent around the Alpine arc. Reconstruction of the limits of the marine transgression from Lutetian to Priabonian show the flexural basin becoming more arcuate with time as it migrated toward the NW ahead of the Apulian indentor. From early to late Oligocene, flexural subsidence accelerated in the frontal NAFB, which accumulated over 4 km of Lower Freshwater Molasse, closing off to the southwest. This phase was synchronous with the peak of alpine collision. In contrast, in SE France SW emplacement of the Embrunais-Ubaye (EU) exotic flysch nappes (up to 4 km thick) onto the the Southern Subalpine chains (SSC) did not generate a flexural response, implying that they were emplaced by shallowly rooted gravity gliding. Oligocene sedimentation in the SSC was confined to small thrust-sheet-top basins such as Barreme and Devoluy. At the same time, further out in the alpine foreland NW-SE extension generated the west European graben system. During the Burdigalian, marine conditions migrated from the Gulf of Lion northward along the European rift system into the NAFB where the Upper Marine Molasse was deposited. Transgression of marine conditions across the Digne-Valensole block (west of the SSC thrust front) is here related to the onset of thermal subsidence in the Gulf of Lion rift system. Throughout the Miocene, the internal and external Alps continued to shorten and rise, providing detritus to the NAFB and leading to the return of continental conditions (Upper Freshwater Molasse). Folding and thrusting in the Jura commenced around 11 Ma uplifting the NAFB. In the Pliocene, the external crystalline massifs were exhumed as evidenced by fission track analyses. These movements were contemporaneous with late thrusting in the Jura and Digne fold-thrust belts. While the NAFB was abandoned, sedimentation in SE France continued with 1 km of Pliocene conglomerates deposited in the Digne–Valensole basin, a depocentre created by the relative uplift of surrounding blocks: the Vaucluse massif to the west, the Digne thrust sheet to the east and the Maures-Esterel massif to the south.