Outline and Geological Setting

Around 90 Ma ago the geology of Turkey exhibited (arguably at least) two subduction zones: one dipping below the Pontides in the North, and one dipping below oceanic lithosphere, now found as ophiolites, to the south of the Pontides. Subsequent subduction led to the accretion of (parts of) the following terranes (from N-S and old to young): the Central Anatolian Crystalline complex (85 Ma); the HP-LT Tavsanli and Afyon belts (until 70-65 Ma); and the essentially non-metamorphic Tauride fold and thrust belt (Paleocene-Eocene). In Central Turkey, continental rocks arrived earliest in the subduction zone below the ophiolites and now form the Central Anatolian Crystalline Complex (CACC) which exhumed along Late Cretaceous extensional detachments. To the east, the continental passive margin was further to the south and there is no evidence that continental rocks arrived in the southern subduction zone before the Late Cretaceous (70-65 Ma).

Overlying these accretionary wedges and ophiolites are sedimentary basins, which form a geological archive of the subduction history of the region. One of these basins is the Upper Cretaceous continental rocks arrived in the southern subduction zone before the Late Cretaceous (70-65 Ma).

Regional mapping

Tectonostratigraphy

Regional context

Outlook

- Geochronology: U-Pb ages for detrital sample
- Age of magmatic deformation related to the back-thrusting of the Taurides
- Rock types & paleohotometry from marine fossils
- Age of onset of sedimentation
- Syn-metamorphic structures to constrain onset of extension and compression
- Paleomagnetism: vertical axis rotations, AMS
- Link this study with a paleomagnetic study of the Sivas Basin to constrain the rotation difference between the Taurides and Pontides and constrain resulting convergence
- Build regional scale balanced cross-sections to quantify the amount of shortening
- Build kinematic reconstructions of Ophiolites