first evaluation of the resulting image products revealed that the Vienna Basin and the adjacent areas are characterised by lineaments which dominantly trend N-S, NE-SW and NW-SE.

OMV's 3D-seismic surveys offer the possibility to check the significance of lineaments and to correlate faults to lineaments derived from remote sensing data. Lineaments correlate to fault patterns which can be identified in 3D-seismic sections using advanced software packages for 3D-visualisation and interpretation. En-echelon N(NE)-striking faults and connecting NE-striking faults have been identified in time slices through Badenian to Pannonian strata (c. 2000 to 400 ms TWT) in the northern Vienna Basin. In cross section, faults display significant normal offsets. Synsedimentary faults are characterised by listric geometries and the stratigraphic patterns within fault-bounded blocks show growth strata and rollover geometries. Coverage of seismic data is limited to depths below 400 ms TWT (c. 400 m). To find possible tectonic surface expressions, faults are traced upwards to check for correlation to morphologic features and lineaments. By comparison to structures in surface outcrops, the fault patterns mapped in seismics were identified as oblique-sinistral faults which bound rhomb-shaped divergent fault duplexes. Arrays of several such duplexes define major sinistral shear zones within the basin which were active from the Karpatian to the Pannonian stage (c. 17-8 Ma). Microtectonic field observations show that the divergent sinistral shear zones are cut by conjugate NW-SE striking normal faults. Older faults were overprinted and moved as oblique-normal faults during correlate NE-SW directed extension. The NW-striking normal faults have a marked morphological expression in paralleling the dominant trend of the drainage system. They are correlated to NW-SE trending lineaments depicted by remote sensing data.

The detailed fault geometries revealed by remote sensing and seismic mapping are combined with results of structural geology surveys in order to acess timing and kinematics of faulting in the Vienna Basin area. Detailed tectonic analyses of surface outcrops allow to establish a deformational and paleostress history which, in turn, can be used to predict the timing and the direction of movements along subsurface faults.

The lateral extrusion of the Eastern Alps: fact or fiction?

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During the last decade, many models dealing with the Neogene tectonics of the Eastern Alps have postulated an eastward extrusion of the Central Alps towards the Pannonian Basin. One main requirement of these models is a large-scale sinistral displacement along major faults at the southern margin of the Northern Calcareous Alps. Such sinistral sense of movement has never been proven for the Salzach and Ennstal Faults. Because of the following arguments, even the opposite seems to be true:

(1) The hydrographical pattern of the Salzach and Enns fluvial systems is incompatible with a young sinistral displacement at the northern border of the Tauern Window.

(2) A hypothetic fault segment at the southern edge of the Mandling Wedge - as has been postulated by the extrusion models - does not exist in nature. Field investigations have shown that the eastward prolongation of the Salzach fault is situated exactly Nof that Mandling Wedge and not S of it. Therefore, the E-W trending Salzach and Ennstal Faults do not belong to one contious fault system.

(3) The Tertiary of Wagrain (lower Miocene) was subjected only to dextral sheer (WANG, pers. comm.). A post-depositonal sinistral displacement can be excluded.

(4) Extrusion tectonics should have caused a counterclockwise rotation of individual segments of the Northern Calcareous Alps with respect to the Central Alps. But palaeomagnetic investigations clearly show that just the opposite did happen.

(5) The assumption of a dextral displacement along the Salzach-Mandling Fault yields an explanation of the arcuate structure of Weyer (Weyerer Bögen) which then was created by an E-W convergence resulting from the opposite sense of movement along theSalzach-Mandling Fault to the W and the Mariazell-Puchberg and Trofaiach Lines to the E (dextral and sinistral, respectively).

Therefore, any tectonic models which require a sinistral Neogene displacement along the northern border of the Tauern Window are simply wrong. A continuous sinistral SEMP Line (Salzach- Ennstal-Mariazell-Puchberg) does not exist. If at all, a lateral extrusion of the Eastern Alps towards the Pannonian Basin could only occur previous to the deposition of the Miocene sediments of Wagrain.