Dachsteinkalk der Kräuterin vor. Der bestimmte CAI-Wert bestätigt die Werte von LEIN & GAWLICK (2000) und liegt mit CAI 1.0 jedoch weit unter den Werten der Mürzalpendecke und ist ein Beleg für die unterschiedliche thermische Beeinflussung der beiden tektonischen Einheiten.

Die Tatsache, daß heute nördlich der SEMP (DECKER, PERESSON & FAUPL 1994) keine höher temperierten Deckenreste der Mürzalpen-Decke mehr angetroffen werden, kann in zweierlei Richtung gedeutet werden: Entweder bewirkte ein hoher Vertikalversatz entlang der SEMP, daß durch eine Hebung des nördlich der Störung gelegenen Teiles dortige, auf dem unalterierten Tirolikum aufgeschobene Deckenteile der Mürzalpen-Decke durch Erosion vollkommen entfernt wurden, oder der Deckenkörper der Mürzalpen-Decke wurde, zusammen mit seinem Sockel entlang der als Schiene wirkenden SEMP frühzeitig mit einem bedeutenden Seitenversatz in die heutige Position gebracht, ohne jemals auf der Göller-Decke nördlich der SEMP aufgeschoben gewesen zu sein.

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Turbidite-reservoir architecture in complex foredeep-margin and wedge-top depocenters, Tertiary Molasse foreland basin system, Austria

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We employ an integrated subsurface dataset, including >400 m of drill cores and 3D seismic-reflection data from >530 sq km of the Tertiary Molasse foreland basin system in Austria, to characterize turbidite-system architecture across structurally-complex foredeep-margin and wedge-top depocenters and to interpret the influence of tectonic deformation and submarine topography on hydrocarbon-reservoir quality and distribution. Turbidite-system architecture and depositional processes were correlated with associated topographic features in order to identify zones of preferential sediment gravity-flow convergence or divergence. Zones of flow convergence facilitate flow acceleration and accumulative flow behavior, whereas zones of flow divergence facilitate deceleration and depletion. Zones of preferential flow convergence include narrow (<2 km) and steep (<20°) foredeep-margin slope channels along thrust front-segmenting tear faults, and steep, unchannelized piggyback-basin and foredeep margins (local gradients as great as 40° across piggyback-basin margins). The foredeep-margin gradient is exaggerated principally by tectonic deformation that post-dates turbidite-system development, based on a paucity of growth strata. Piggyback-basin-margin gradients are exaggerated as a result of deformation synchronous with and following turbidite-system development, judging from the presence of growth strata. Slope-channel topography facilitated the development of relatively coarse-grained, amalgamated turbidite reservoirs, whereas unchannelized basin-margin topography facilitated deposition of fine-grained, chaotic non-reservoirs. Zones of preferential flow divergence are flat (<1°), unconfined (i.e., large in comparison to sediment gravity flows) piggyback-basin floors, which facilitated the development of relatively coarse-grained, non-amalgamated, upward fining turbidite reservoirs, stratigraphically partitioned by fine-grained mass transport-complex deposits. The results of this study elucidate the influence of foredeep-margin and wedge-top tectonic deformation and topography on turbidite-system and associated reservoir character and distribution across the Molasse foreland basin system in Austria, and can be applied to oil and gas exploration in analogous, structurally-complex settings.

Seismic tomography of the lithosphere and upper mantle beneath Vienna and Western Pannonian Basins

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The Carpathian Basins Project (CBP) aims to understand the origin of the Miocene-age extensional basins contained within the compressional arc of the Alpine-Carpathian system. To test competing models for the recent geological evolution of the Carpathian-Pannonian lithosphere and upper mantle, we present a new determination of P-wave velocity structure to depths of 400 km beneath this region. This model is based on inversion of seismic travel-time residuals from 100 broadband seismic stations. We include CBP data from a 15-month deployment of a high resolution network of 46 stations deployed NW-SE across the Vienna and western Pannonian basins through Austria, Hungary and Serbia, together with 10 broadband stations spread across the Pannonian basin and a further 45 permanent broadband stations. We use P-wave arrival times from approximately 341 teleseismic events. The 3-D velocity variation obtained by tomographic inversion of the P-wave travel-time residuals shows an approximately linear band of fast material of width about 100 km, orientated WNW-ESE beneath the western Pannonian Basin at sub-lithospheric depths. This feature is apparently continuous with structure beneath the Eastern Alps, but its strike rotates anti-clockwise down to the base of the model at 400 km depth. We also find the WNW-ESE orientation in SKS-based measurements of the fast propagation direction of shear waves in this part of the western Pannonian Basin. In the Vienna Basin we see a contrast between the fast region and slow material which is aligned with the edge of the eastern Alps. Further north, a region of fast material underlies the cold and stable Bohemian Massif.

Grundwasserstauers im Marchfeld, Lihostratigraphie versus Hydrostratigraphie

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Grundwasserleiter werden von unstetigen Oberflächenstruktu-