carbonatites display well defined and characteristic absorption features due to electronic transitions and vibrational processes. The analysis of the hyperspectral data was based on Self Organizing Maps and spectral mixture analysis. The resulting thematic lithological map shows the distribution of dolomite carbonatite, søvite, a zone of fenite and carbonatite dykes, fenite and marginal alteration zone. To assess the accuracy of the mapping results field investigations in the study area were carried out as well. The localization through hyperspectral remote sensing of the sparsely occurring søvite rocks is of petrological and economic geology interest. The study demonstrates the effectiveness of hyperspectral remote sensing for lithological mapping and mineral exploration of carbonatite complexes and in the Arctic latitudes of west Greenland.

**Structure of the crust and upper mantle in the Vienna Basin Region**

BEHM, M.,[1,2] & BOKELMANN, G.[1]
[1] University of Vienna, Department of Meteorology and Geophysics
[2] Colorado School of Mines, Center for Wave Phenomena

Within the last decade, several geophysical experiments targeted the Eastern Alps and their surroundings to the neighbouring tectonic provinces. The main results of these investigations are large-scale seismic images of the crust and upper mantle. Although the size of the Vienna Basin region is relatively small compared with the resolution of these models, we find several interesting features in this specific area.

The lower crust is characterized by high P-wave velocities (6.8 - 7.2 km/s). In accordance, the amplitude and wavelength of a significant positive gravity anomaly can be modelled by high densities in the lower crust. The crust-mantle boundary below the Vienna Basin appears more diffuse, which suggests a gradual increase from crustal velocities to upper mantle velocities, and is maybe explained by mafic underplating. A pronounced reflector is found in the upper mantle in a depth of about 55 km. Those features are not restricted to the Vienna Basin region, but stretch also into the Little Hungarian plain towards the south-east. Teleseismic images reveal a positive velocity anomaly in the deeper part of the upper mantle. This anomaly is centered between the Vienna Basin and the Little Hungarian plain, and it extends from depths around 50 km to 200 km.

The spatial coincidence of these deep structures is thought-provoking. So far, the majority of the evolutionary models for the Vienna Basin do not take lower crustal and mantle features into detailed consideration. The extent of the deep structures may suggest common large-scale tectonic processes for the Vienna Basin and surrounding basin systems (e.g., Little Hungarion plain). The presented geophysical data aim to contribute to this discussion, and serve as a basis for future experiments and studies (e.g. deep seismic reflection profiling, receiver function analysis).

**Die Kinematik und Segmentierung des aktiven Wiener Becken-Störungssystems**

BEIDINGER, A & DECKER, K
Department of Geodynamics and Sedimentology, University of Vienna

Das aktive Wiener Becken-Blattverschiebungssystem besteht aus mehreren Segmenten mit unterschiedlichen seismotektonischen Eigenschaften. Die Kartierung der PDZ (Principle Displacement Zone) der Störung in 3 bis 6 km Tiefe aus Reflexionsseismik in Verbindung mit geomorphologischen und quartärgeologischen Daten erlaubt die Unterscheidung von mehreren NNE- bis NE-streichenden divergenten Störungsabschnitten. Die Störungssegmente werden von Biegungen der PDZ begrenzt, an denen sich die Streichrichtung um 20°–35° ändert. Die (N)NE-streichenden divergenten Abschnitte werden von ENE-streichenden Segmenten verbunden, die parallel zum Bewegungsvektor der Seitenverschiebung orientiert sind. Transtension an den divergenten Abschnitten führt zur Ausbildung negativer Blumenstrukturen und quartärer Pull-Apart-Becken. Dehnung an den Releasing Bends wird außerdem von Abschiebungen kompensiert, die an den Knickpunkten der PDZ südwestlich der divergenten Abschnitte von der Haquptstörung abzweigen.
Wir nehemen an, dass die Richtungsänderungen der Hauptstörung an den Segmentgrenzen um 20°–35° maßgebliche Hindernisse für die Ausbreitung dynamischer Brüche darstellen. Die einzelnen Störungssegmente erlauben daher die Abschätzung der maximalen Störungsfläche, die während eines einzelnen Erdbebens aktiviert werden kann. Die ermittelten Störungsflächen (55 bis ca. 400 km² für Blattverschiebungssegmente; 200 bis ca.