AAPG Annual Meeting
March 10-13, 2002
Houston, Texas

Hans-Gert Linzer[1] (1) RAG (Rohoel-Aufsuchungs AG), Vienna, Austria

Structural and Stratigraphic Traps in Channel Systems and Intraslope Basins of the Deep-Water Molasse Foreland Basin of the Alps

The Molasse foreland basin gas-productive deep-water sequences of the Eastern Alps consist of Oligocene to Early Miocene turbidites and vertically stacked axial channel systems. High quality 3D land seismic illuminates the spatial structure of the channel systems. Flattening of the seismic volume enables a visualisation of the paleo-geometry of the axial channel systems and its feeder channels and highlights the distribution of debris flow units and large-scale mass flows from the margins of the Molasse basin. Foreland thrusting formed a complex triangle zone at the southern margin of the basin and played a significant role in controlling lithology, stratal architecture and the evolution of intraslope basins. The southern slope of the basin was steepend by the evolving triangle zone and caused tectonic triggered slope instability followed by large scale submarine slides at the southern flank of the Molasse basin. The head scarps of the mass flow bodies formed ponded intraslope basins. An example of such a ponded intraslope basin is the Haidach gas field that formed in the head scarp area of a submarine mass flow and represents a high performance reservoir containing sands up to 100 m thick with high porosity and permeability. The ponded accommodation space was filled with debris flow sequences and crosscutting channels. A sinuous channel marks the spill phase of the ponded basin. The low amplitudes in the channel indicate mud fill in the bypass area. The overflow was deposited to the east close to the axial channel system in an updip position. Regional reconstruction of the Molasse basin shows that the eastern part of the Molasse basin was tilted to the west and uplifted during Neogene times.