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After a period of virtual quiescence during the Mesozoic, fault zones of the NPT were reactivated as normal faults and flexures mainly during the Paleogene. These faults and flexures constitute an important component of the structural grain at the northern rim of the Molasse Basin.

Structural Configuration of the Swiss Molasse Basin: Eastern part (NFP 20)

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Within the Swiss national research program NFP 20 several new seismic lines were acquired and other existing industry lines were exchanged and reprocessed. In the transect of eastern Switzerland traded lines through the Molasse basin and the adjoint Alps were reprocessed by M. Stäuble (Stäuble & Pfiffner 1991) and complemented the line NFP 20-EAST (Pfiffner et al. 1990) which crosses the Helvetic and Penninic zones of the Alps.

The Plateau Molasse is characterized by southward thickness increase of the Tertiary strata, namely the USM, and, to a lesser degree, OMM and OSM. This thickness increase is associated with onlap structures. The Mesozoic strata beneath thin southward and show a notable change in seismic character at the transition between Plateau and Subalpine Molasse. This change may well be related to synsedimentary faulting in early Jurassic times. The Mesozoic strata dip at a shallow angle towards the south. An abrupt change to a steeper dip occurs at the southern end of the Plateau Molasse and is related to the northward pinch-out of the UMM. Steeply dipping faults dissect either the entire Molasse section (and are thus of post Mid-Miocene age) or they affect only the Mesozoic strata. Basin inversion leads to the formation of a classic triangle zone at the transition between Plateau and Subalpine Molasse. The triangle zone involves also the "Randunterschiebung", a southvergent thrust fault located at the southern margin of the Plateau Molasse. Within the Subalpine Molasse the thrust faults seemingly flatten out at depth. They are most likely related to folding and thrusting on the northern flank of the Aar massif. The transition between the UMM beds, underlying the Helvetic nappes (Säntis nappe) north of Walensee and the North-Helvetic Flysch, underlying the Glarus nappe south of Walensee might be represented by a change in seismic character as seen just north of Sargans in the line NFP 20-EAST.

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