

STRUCTURAL EVOLUTION OF ZALA BASIN AREA BASED ON SEISMIC SECTION

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ABSTRACT

The study area lies in Pannonian basin in Hungary located 190 km SW of Budapest where the seismic 3D survey has been done for the area for the purpose of hydrocarbon exploration. The area is interesting because it is located on the Mid-Hungarian Fault zone, different structures appear in the area therefore many wells drilled for hydrocarbon exploration. According to the tectonic classification the area is divided into three major tectonic events (pre-rift, syn-rift and post-rift) which all together evolved the basin in different geological time and all of the events can be seen in seismic section.

The interpretation was based on horizon reflections, using reliable picks from the wells and previous researches of surrounding areas to understand the structural model of the basin, also many geomodeling techniques have been applied to show the structural evolution phases. After modeling has been finished, it was compared to regional structural evolution which shows the same result but more details can be seen in this study due to the high resolution of the survey.

Finally the structural evolution model has been proposed which expressed the detailed information about time of deposition and the following erosions of pre-rift phases, defining the major strike slip fault of the area. After the phase of rifting and creation of grabens, it is followed by depositional sequences of post rift events. The most important thing which has been applied for this model was creating the horizon flattening and palinspastic reconstruction for the late phases of the structural evolution by using horizon flattening techniques with geomodeling simulations. The final outcome of the project is structural evolution phases which represent the structural activity versus time with given explanation for each phases.

Keywords: *seismic interpretation, structural geology, Pannonian.*