

Evolution of the Kuban Basin, Northwestern Caucasus Region, Russia, based on Seismic Reflection Data

By

Joel C. Luckow

University of Tennessee, Department of Geological Sciences, Knoxville, TN,
U.S.A. (cluckow@utk.edu)

The University of Tennessee, Knoxville, and Kuban State University, Krasnodar Territory, Russia, have a formal agreement to collaborate on vibroseis studies, known as the KubanSeis Project. In October 2001, both universities worked to acquire seismic data in the Shebsh Oil and Gas Field of the Kuban Basin in southwest Russia and will acquire more in 2002. The primary objectives of my research are to: (1) study the timing of deposition in the Kuban Basin, relative to thrusting in the northern Caucasus, (2) compare older Russian seismic interpretations with my own, based upon the more recent data, and (3) determine which sedimentary layers and locations could be most exploited for petroleum production.

Thus far, I have produced unmigrated stacks that will be compared with a Russian cross-section. The Russian cross-section of the same profile, based on well data and Soviet era seismic data, shows different subsurface structures, compared with the new stacks. The Russians regard deformation as a fault-bend style folding. In contrast, I interpret the deformation as fault-propagation style folding. The Russian interpretation also shows a normal fault cutting the center of a prominent anticline, which is not obvious in my seismic data. My research will add additional seismic data and resolve the question of which interpretation of the style and timing of folding is correct.