

**AAPG International Conference
Barcelona, Spain
September 21-24, 2003**

Jack Allan¹, S. Qing Sun² (1) C&C Reservoirs Inc, Fullerton, CA (2) C & C Reservoirs Inc, Houston, TX

Evaluating Risk Factors and Exploration/Development Strategies in Stratigraphic and Subtle Traps

Explorationists have made a limited effort to deliberately search for stratigraphic and subtle traps because it is still relatively easy to find structural traps with present-day tools and concepts, and structural plays are perceived as having lower risk. More than 80% of the world's discovered stratigraphic and subtle traps are located in the USA and Canada. There is nothing unique about the geology of North America to explain this remarkable disparity, which occurs because more wells have been drilled there than elsewhere, and exploration in the rest of the world has focused largely on structural traps. This means that a major category of oil and gas trap has been systematically ignored throughout most of the world.

More than 150 well-documented stratigraphic and subtle traps, which lack obvious four-way closure, were studied. Seven major trap categories, which comprise sixteen individual trap types, were defined using this data set. The major trap categories include lateral facies change and depositional pinchout traps, which are created by depositional changes; unconformity onlap/truncation and channel-/valley-fill traps, which are related to erosion and unconformity development; and diagenetic, fracture and capillary-pressure traps, which have their own unique characteristics. Trapping configuration, closure mechanism, reservoir heterogeneity, petroleum system, exploration and delineation history, and geological/reservoir engineering risks were compared and evaluated. This analysis provided important insights into successful exploration and development strategies and key risk factors associated with each trap type.