

Multispectral Volumetric Curvature Adding Value to 3D Seismic Data Interpretation

Satinder Chopra¹ and Kurt J. Marfurt²

¹Arcis Corporation, Calgary, AB, Canada; schopra@arcis.com

²University of Houston, Houston, TX, United States

Abstract/Excerpt

Computation of volumetric curvature attributes is a significant advancement in the field of attributes. Until recently, curvature attribute applications were limited to interpreted horizons. Horizon-based curvature has been successfully used in the prediction of fault and fractures, and has been shown to be correlated with open fractures measured on outcrops (Lisle, 1994) or measured by production tests (Hart et al., 2002). Horizon-based curvature is limited by the interpreter's ability to pick horizons of interest on 3D seismic data volumes. This could be a challenging task in datasets contaminated with noise and also in zones where rock interfaces do not exhibit significant a consistent impedance contrast to amenable to human interpretation. Very recently, volumetric computation of curvature has been introduced, which dispels the need for consistent horizons in the zone of interest (Al-Dossary and Marfurt, 2006).