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Pitfalls in the Use of Piercing Points for Slip Estimates, Wichita and Arbuckle Uplifts.

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Numerous workers have made use of "piercing points" to estimates slip direction and magnitude for the Wichita and Arbuckle Uplifts. Due to the subsurface nature of those uplifts, most studies have relied on offsets of isopach contour lines as "piercing points". These studies have yielded inconsistent results, with extreme variability in both magnitude and direction of slip. This paper examines the methods used in previous studies, identifies the factors which control slip estimates, and questions the use of highly subjective interpretational data as piercing points. Problems which plague previous estimates include: poorly documented fault geometry, interpretations as piercing points, insufficient well control, and inappropriate restoration methods. Piercing point arguments have been applied to two models of fault geometry for the region: high-angle faulting associated with wrench faults and low-angle oblique thrusts. The author finds no credible evidence amongst the published data that support significant amounts of lateral slip for either model.