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Geometric and Mechanical-Stiffness Controls on Jointing in Cataclastic Deformation Bands

Sarah Tindall, Andreas Eckert

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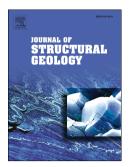
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## ACCEPTED MANUSCRIPT

1	Geometric and Mechanical-Stiffness Controls on Jointing in Cataclastic Deformation
2	Bands
3	
4	*Sarah TINDALL <sup>1</sup> and Andreas ECKERT <sup>2</sup>
5	<sup>1</sup> Department of Physical Sciences, Kutztown University, Kutztown, PA 19530, USA,
6	tindall@kutztown.edu, +1 610 683 4325
7	<sup>2</sup> Department of Geosciences & Geological & Petroleum Engineering, Missouri University of
8	Science & Technology, Rolla, MO 65409, USA, eckertan@mst.edu
9	
LO	Keywords: cataclastic deformation bands, joints, stress re-orientation, mechanical stiffness
l1	contrast
L2	
13	Abstract
L4	Cataclastic deformation bands on the Waterpocket Fold in southern Utah contain cross-
L5	cutting joints that terminate at the contacts between the deformation bands and surrounding
L6	sandstone. The mechanical contrast between sandstone host rock and stronger deformation
L7	bands is analogous to inter-bedded weak and strong layers in a sedimentary sequence, a situation
L8	known to result in joints preferentially forming in the stronger layers with joints perpendicular to
L9	layer boundaries. Deformation bands in the field area represent conjugate strike-slip shear
20	zones, many with internal Riedel shear geometry, creating a three-dimensional network of
21	mechanically strong zones in variable orientations. Joint attitudes were found to vary
22	systematically as a function of deformation band strike, and the angle between each deformation

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