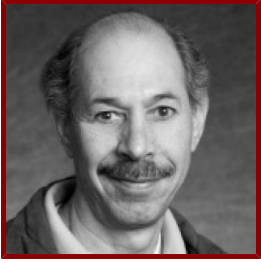


# Stanford

---



## Atilla Aydin

Professor (Research) of Geological and Environmental Sciences, Emeritus  
Geological Sciences

### Bio

---

#### ACADEMIC APPOINTMENTS

- Emeritus Faculty, Acad Council, Geological Sciences

#### HONORS AND AWARDS

- Fellow, Geological Society of America (2000)

#### PROFESSIONAL EDUCATION

- Ph.D., Stanford University , Geology (1978)
- M.S., Stanford University , Geology (1974)
- B.S., Technical University of Istanbul , Geological Engineering (1968)

#### LINKS

- Structural Geology and Geomechanics: <http://pangea.stanford.edu/research/geomech/index.html>

### Research & Scholarship

---

#### CURRENT RESEARCH AND SCHOLARLY INTERESTS

##### Research

I am interested in the formation, geometric patterns, and fluid flow properties of fractures and faults in a broad range of scales. My students and I are involved in projects that require both a strong field component and modeling. The field component is similar to a detective's work, which aims to establish temporal and spatial relationships among various elements of a structure. The modeling component is like the moral of the story, enabling one to see through the rationale and use it for guidance in the future.

##### Professional Activities

Fellow, Geological Society of America; Member, American Geophysical Union and American Association of Petroleum Geologists

#### PROJECTS

- Rock Fracture Knowledgebase - Stanford University

### Publications

---

#### PUBLICATIONS

- Rock Fracture Knowledgebase

Aydin, A., Zhong, J.  
rockfracture.com.2017

- **Fluid-flow effects of compartmentalized distribution of compaction bands in an aeolian sandstone in three dimensions.** Deng, S., Jiang, R., Karimi-Fard, M., Aydin, A., *Petroleum Geosciences*, doi:10.1144/petgeo2016-051 *Petroleum Geosciences*  
Deng, S., et al  
2017
- **The influence of resolution on scale-dependent clustering in fracture spacing data** *INTERPRETATION-A JOURNAL OF SUBSURFACE CHARACTERIZATION*  
Roy, A., Aydin, A., Mukerji, T.  
2016; 4 (3): T387-T394
- **Structural and statistical characterization of joints and multi-scale faults in an alternating sandstone and shale turbidite sequence at the Santa Susana Field Laboratory: Implications for their effects on groundwater flow and contaminant transport** *JOURNAL OF STRUCTURAL GEOLOGY*  
Cilona, A., Aydin, A., Likerman, J., Parker, B., Cherry, J.  
2016; 85: 95-114
- **Mechanism of formation of wiggly compaction bands in porous sandstone: 1. Observations and conceptual model** *JOURNAL OF GEOPHYSICAL RESEARCH-SOLID EARTH*  
Liu, C., Pollard, D. D., Deng, S., Aydin, A.  
2015; 120 (12): 8138-8152
- **The role of mechanical stratigraphy on normal fault growth across a Cretaceous carbonate multi-layer, central Texas (USA)** *ITALIAN JOURNAL OF GEOSCIENCES*  
Agosta, F., Wilson, C., Aydin, A.  
2015; 134 (3): 423-441
- **The dynamics and interaction of compaction bands in Valley of Fire State Park, Nevada (USA): Implications for their growth, evolution, and geostatistical property** *TECTONOPHYSICS*  
Torabi, A., Aydin, A., Cilona, A., Jarsto, B. E., Deng, S.  
2015; 657: 113-128
- **Cross-bedding related anisotropy and its interplay with various boundary conditions in the formation and orientation of joints in an aeolian sandstone** *JOURNAL OF STRUCTURAL GEOLOGY*  
Deng, S., Cilona, A., Morrow, C., Mapeli, C., Liu, C., Lockner, D., Prasad, M., Aydin, A.  
2015; 77: 175-190
- **Permeability of a fault zone crosscutting a sequence of sandstones and shales and its influence on hydraulic head distribution in the Chatsworth Formation, California, USA** *HYDROGEOLOGY JOURNAL*  
Cilona, A., Aydin, A., Johnson, N. M.  
2015; 23 (2): 405-419
- **The strength anisotropy of localized compaction: A model for the role of the nature and orientation of cross-beds on the orientation and distribution of compaction bands in 3-D** *JOURNAL OF GEOPHYSICAL RESEARCH-SOLID EARTH*  
Deng, S., Aydin, A.  
2015; 120 (3): 1523-1542
- **Permeability characterization of natural compaction bands using core flooding experiments and 3D image-based analysis: Comparing and contrasting the results from two different methods** *American Association of Petroleum Geologists Bulletin*  
Deng, S., Zuo, L., Aydin, A., Dvorkin, J., Mukerji, T.  
2015; 99 (1): 27-49
- **Failure modes of shales and their implications for natural and man-made fracture assemblages** *AAPG BULLETIN*  
Aydin, A.  
2014; 98 (11): 2391-2409
- **The relationship between normal and strike-slip faults in Valley of Fire State Park, Nevada, and its implications for stress rotation and partitioning of deformation in the east-central Basin and Range** *JOURNAL OF STRUCTURAL GEOLOGY*  
Aydin, A., de Joussineau, G.  
2014; 63: 12-26

- **Fluid flow through porous sandstone with overprinting and intersecting geological structures of various types** *Advances in the Study of Fractured Reservoirs, Special Publications, 374*  
Zhou, X., Karimi-Fard, M., Durlafsky, L. J., Aydin, A., Spence, et al., G. H.  
The Geological Society, London.2014
- **Is there a link between faulting and magmatism in the south-central Aegean Sea?** *GEOLOGICAL MAGAZINE*  
Kokkalas, S., Aydin, A.  
2013; 150 (2): 193-224
- **Distribution of compaction bands in 3D in an aeolian sandstone: The role of cross-bed orientation** *TECTONOPHYSICS*  
Deng, S., Aydin, A.  
2012; 574: 204-218
- **Spatial Statistical Properties of Pressure Solution Seams in Clastic Rocks in Southwest Ireland** *MATHEMATICAL GEOSCIENCES*  
Nenna, F., Zhou, X., Aydin, A.  
2012; 44 (5): 595-617
- **Mechanics of the formation of orthogonal sets of solution seams, and solution seams and veins and parallel solution seams and veins** *TECTONOPHYSICS*  
Zhou, X., Aydin, A.  
2012; 532: 242-257
- **Growth processes, dimensional parameters and scaling relationships of two conjugate sets of compactive shear bands in porous carbonate grainstones, Favignana Island, Italy** *JOURNAL OF STRUCTURAL GEOLOGY*  
Tondi, E., Cilona, A., Agosta, F., Aydin, A., Rustichelli, A., Renda, P., Giunta, G.  
2012; 37: 53-64
- **The role of pressure solution seam and joint assemblages in the formation of strike-slip and thrust faults in a compressive tectonic setting; The Variscan of south-western Ireland** *JOURNAL OF STRUCTURAL GEOLOGY*  
Nenna, F., Aydin, A.  
2011; 33 (11): 1595-1610
- **From outcrop to flow simulation: Constructing discrete fracture models from a LIDAR survey** *AAPG BULLETIN*  
Wilson, C. E., Aydin, A., Karimi-Fard, M., Durlafsky, L. J., Sagy, A., Brodsky, E. E., Kreylos, O., Kellogg, L. H.  
2011; 95 (11): 1883-1905
- **Use of outcrop observations, geostatistical analysis, and flow simulation to investigate structural controls on secondary hydrocarbon migration in the Anacacho Limestone, Uvalde, Texas** *AAPG BULLETIN*  
Wilson, C. E., Aydin, A., Durlafsky, L. J., Boucher, A., Brownlow, D. T.  
2011; 95 (7): 1181-1206
- **The formation and growth of pressure solution seams in clastic rocks: A field and analytical study** *JOURNAL OF STRUCTURAL GEOLOGY*  
Nenna, F., Aydin, A.  
2011; 33 (4): 633-643
- **Mechanics of pressure solution seam growth and evolution** *JOURNAL OF GEOPHYSICAL RESEARCH-SOLID EARTH*  
Zhou, X., Aydin, A.  
2010; 115
- **Analysis of the growth of strike-slip faults using effective medium theory** *JOURNAL OF STRUCTURAL GEOLOGY*  
Aydin, A., Berryman, J. G.  
2010; 32 (11): 1629-1642
- **Quasi-static analysis of elastic behavior for some systems having higher fracture densities** *INTERNATIONAL JOURNAL FOR NUMERICAL AND ANALYTICAL METHODS IN GEOMECHANICS*  
Berryman, J. G., Aydin, A.  
2010; 34 (16): 1687-1724
- **Oblique normal faulting along the northern edge of the Majella Anticline, central Italy Inferences on hydrocarbon migration and accumulation** *JOURNAL OF STRUCTURAL GEOLOGY*  
Agosta, F., Alessandrini, M., Tondi, E., Aydin, A.

2010; 32 (9): 1317-1333

- **Deformation along the leading edge of the Maiella thrust sheet in central Italy** *JOURNAL OF STRUCTURAL GEOLOGY*  
Aydin, A., Antonellini, M., Tondi, E., Agosta, F.  
2010; 32 (9): 1291-1304
- **Bed-parallel compaction bands in aeolian sandstone: Their identification, characterization and implications** *TECTONOPHYSICS*  
Aydin, A., Ahmadov, R.  
2009; 479 (3-4): 277-284
- **Segmentation along Strike-Slip Faults Revisited** *PURE AND APPLIED GEOPHYSICS*  
de Jossineau, G., Aydin, A.  
2009; 166 (10-11): 1575-1594
- **Oblique normal faulting along the northern edge of the Majella Anticline, central Italy: Inferences on hydrocarbon migration and accumulation** *JOURNAL OF STRUCTURAL GEOLOGY*  
Agosta, F., Alessandrini, M., Tondi, E., Aydin, A.  
2009; 31 (7): 674-690
- **Ontology of Fractures** *Journal of Structural Geology*  
Zhong, J., Aydin, A., McGuinness, D. I.  
2009; 31: 251-259
- **Failure modes in deep-water carbonates and their impact for fault development: Majella Mountain, Central Apennines, Italy** *MARINE AND PETROLEUM GEOLOGY*  
Antonellini, M., Tondi, E., Agosta, F., Aydin, A., Cello, G.  
2008; 25 (10): 1074-1096
- **Geochemical traces of CO<sub>2</sub>-rich fluid flow along normal faults in central Italy** *GEOPHYSICAL JOURNAL INTERNATIONAL*  
Agosta, F., Mulch, A., Chamberlain, P., Aydin, A.  
2008; 174 (2): 758-770
- **The origin of oriented lakes in the Andean foreland, Parque Nacional Torres del Paine (Chilean Patagonia)** *GEOMORPHOLOGY*  
Gonzales, J., Aydin, A.  
2008; 97 (3-4): 502-515
- **Structural characterization of deep-water deposits in a foreland basin, Silla Syncline (Chilean Patagonia), with applications to depositional processes** *JOURNAL OF STRUCTURAL GEOLOGY*  
Gonzales, J., Aydin, A.  
2008; 30 (9): 1095-1108
- **The evolution of the damage zone with fault growth in sandstone and its multiscale characteristics** *JOURNAL OF GEOPHYSICAL RESEARCH-SOLID EARTH*  
de Jossineau, G., Aydin, A.  
2007; 112 (B12)
- **Permeability upscaling of fault zones in the Aztec Sandstone, Valley of Fire State Park, Nevada, with a focus on slip surfaces and slip bands** *HYDROGEOLOGY JOURNAL*  
Ahmadov, R., Aydin, A., Karimi-Fard, M., Durlifsky, L. J.  
2007; 15 (7): 1239-1250
- **Physical properties of carbonate fault rocks, fucino basin (Central Italy): implications for fault seal in platform carbonates** *GEOFLUIDS*  
Agosta, F., Prasad, M., Aydin, A.  
2007; 7 (1): 19-32
- **Characterization of strike-slip fault - Splay relationships in sandstone** *JOURNAL OF STRUCTURAL GEOLOGY*  
de Jossineau, G., Mutlu, O., Aydin, A., Pollard, D. D.  
2007; 29 (11): 1831-1842
- **Evolution of fracture and fault-controlled fluid pathways in carbonates of the Albanides fold-thrust belt** *AAPG BULLETIN*  
Wall, B. R., Girbacea, R., Mesonjesi, A., Aydin, A.

2006; 90 (8): 1227-1249

- **Failure modes of the lineaments on Jupiter's moon, Europa: Implications for the evolution of its icy crust** *JOURNAL OF STRUCTURAL GEOLOGY*  
Aydin, A.  
2006; 28 (12): 2222-2236
- **Using an elastic dislocation model to investigate static Coulomb stress change scenarios for earthquake ruptures in the eastern Marmara Sea region, Turkey** *International Meeting on Analogue and Numerical Modelling of Geological Processes*  
Muller, J. R., Aydin, A., Wright, T. J.  
GEOLOGICAL SOC PUBLISHING HOUSE.2006: 397-414
- **Geological and mathematical framework for failure modes in granular rock** *JOURNAL OF STRUCTURAL GEOLOGY*  
Aydin, A., Borja, R. I., Eichhubl, P.  
2006; 28 (1): 83-98
- **The role of deformation bands, stylolites and sheared stylolites in fault development in carbonate grainstones of Majella Mountain, Italy** *JOURNAL OF STRUCTURAL GEOLOGY*  
Tondi, E., Antonellini, M., Aydin, A., Marchegiani, L., Cello, G.  
2006; 28 (3): 376-391
- **Architecture and deformation mechanism of a basin-bounding normal fault in Mesozoic platform carbonates, central Italy** *JOURNAL OF STRUCTURAL GEOLOGY*  
Agosta, F., Aydin, A.  
2006; 28 (8): 1445-1467
- **Structure, petrophysics, and diagenesis of shale entrained along a normal fault at Black Diamond Mines, California - Implications for fault seal** *AAPG BULLETIN*  
Eichhubl, P., D'Onfro, P. S., Aydin, A., Waters, A., McCarty, D. K.  
2005; 89 (9): 1113-1137
- **Fault and fracture systems in a fold and thrust belt: An example from Bolivia** *AAPG BULLETIN*  
Florez-Nino, J. M., Aydin, A., Mavko, G., Antonellini, M., Ayaviri, A.  
2005; 89 (4): 471-493
- **Using mechanical modeling to constrain fault geometries proposed for the northern Marmara Sea** *JOURNAL OF GEOPHYSICAL RESEARCH-SOLID EARTH*  
Muller, J. R., Aydin, A.  
2005; 110 (B3)
- **Structural evolution of fault zones in sandstone by multiple deformation mechanisms: Moab fault, southeast Utah** *GEOLOGICAL SOCIETY OF AMERICA BULLETIN*  
Davatzes, N. C., Eichhubl, P., Aydin, A.  
2005; 117 (1-2): 135-148
- **Petrophysical properties of cataclastic fault rock in sandstone** *Faults, fluid flow, and petroleum traps*  
Flodin, E. A., Gerdes, M., Aydin, Z., Wiggins, W. D.  
edited by Sorkhabi, R., Tsuji, Y.  
2005: 197-217
- **Distribution and nature of fault architecture in a layered sandstone and shale sequence: An example from the Moab fault** *Faults, fluid flow, and petroleum traps*  
Davatzes, N. C., Aydin, A.  
edited by Sorkhabi, R., Tsuji, Y.  
2005: 153-180
- **Rupture progression along discontinuous oblique fault sets: implications for the Karadere rupture segment of the 1999 Izmit earthquake, and future rupture in the Sea of Marmara** *1st International Symposium on Earth Sciences and Engineering*  
Muller, J. R., Aydin, A.  
ELSEVIER SCIENCE BV.2004: 283-302

- **Paleo-fluid flow and deformation in the Aztec Sandstone at the Valley of Fire, Nevada - Evidence for the coupling of hydrogeologic, diagenetic, and tectonic processes** *GEOLOGICAL SOCIETY OF AMERICA BULLETIN*  
Eichhubl, P., Taylor, W. L., Pollard, D. D., Aydin, A.  
2004; 116 (9-10): 1120-1136
- **Upscaled models of flow and transport in faulted sandstone: boundary condition effects and explicit fracture modelling** *PETROLEUM GEOSCIENCE*  
Flodin, E. A., Durlowsky, L. J., Aydin, A.  
2004; 10 (2): 173-181
- **Geometry and kinematic evolution of Riedel shear structures, Capitol Reef National Park, Utah** *JOURNAL OF STRUCTURAL GEOLOGY*  
Katz, Y., Weinberger, R., Aydin, A.  
2004; 26 (3): 491-501
- **Reply to the comments by G. Bertotti and V. Picotti on: "Uplift and contractional deformation along a segmented strike-slip fault system: the Gargano Promontory, southern Italy"** *JOURNAL OF STRUCTURAL GEOLOGY*  
Brankman, C. M., Aydin, A.  
2004; 26 (12): 2327-2329
- **Faults with asymmetric damage zones in sandstone, Valley of Fire State Park, southern Nevada** *JOURNAL OF STRUCTURAL GEOLOGY*  
Flodin, E., Aydin, A.  
2004; 26 (5): 983-988
- **Uplift and contractional deformation along a segmented strike-slip fault system: the Gargano Promontory, southern Italy** *JOURNAL OF STRUCTURAL GEOLOGY*  
Brankman, C. M., Aydin, A.  
2004; 26 (5): 807-824
- **The evolution of faults formed by shearing across joint zones in sandstone** *JOURNAL OF STRUCTURAL GEOLOGY*  
Myers, R., Aydin, A.  
2004; 26 (5): 947-966
- **Evolution of a strike-slip fault network, Valley of Fire State Park, southern Nevada** *GEOLOGICAL SOCIETY OF AMERICA BULLETIN*  
Flodin, E. A., Aydin, A.  
2004; 116 (1-2): 42-59
- **Computational modeling of deformation bands in granular media. I. Geological and mathematical framework** *COMPUTER METHODS IN APPLIED MECHANICS AND ENGINEERING*  
Borja, R. I., Aydin, A.  
2004; 193 (27-29): 2667-2698
- **The formation of conjugate normal fault systems in folded sandstone by sequential jointing and shearing, Waterpocket monocline, Utah** *JOURNAL OF GEOPHYSICAL RESEARCH-SOLID EARTH*  
Davatzes, N. C., Aydin, A.  
2003; 108 (B10)
- **Petrophysical constraints on deformation styles in Aztec sandstone, Southern Nevada, USA** *PURE AND APPLIED GEOPHYSICS*  
Flodin, E., Prasad, M., Aydin, A.  
2003; 160 (9): 1589-1610
- **Investigating the transition between the 1967 Mudurnu Valley and 1999 Izmit earthquakes along the North Anatolian fault with static stress changes** *GEOPHYSICAL JOURNAL INTERNATIONAL*  
Muller, J. R., Aydin, A., Maerten, F.  
2003; 154 (2): 471-482
- **A new process-based methodology for analysis of shale smear along normal faults in the Niger Delta** *AAPG BULLETIN*  
Koledoye, B. A., Aydin, A., May, E.  
2003; 87 (3): 445-463
- **Overprinting faulting mechanisms during the development of multiple fault sets in sandstone, Chimney Rock fault array, Utah, USA** *TECTONOPHYSICS*  
Davatzes, N. C., Aydin, A., Eichhubl, P.

2003; 363 (1-2): 1-18

- **Ductile opening-mode fracture by pore growth and coalescence during combustion alteration of siliceous mudstone** *JOURNAL OF STRUCTURAL GEOLOGY*  
Eichhubl, P., Aydin, A.  
2003; 25 (1): 121-134
- **Overprinting faulting mechanisms in high porosity sandstones of SE Utah** *JOURNAL OF STRUCTURAL GEOLOGY*  
Davatzes, N. C., Aydin, A.  
2003; 25 (11): 1795-1813
- **Formation and growth of normal faults in carbonates within a compressive environment** *GEOLOGY*  
Graham, B., Antonellini, M., Aydin, A.  
2003; 31 (1): 11-14
- **Dilation bands: A new form of localized failure in granular media** *GEOPHYSICAL RESEARCH LETTERS*  
Du Bernard, X., Eichhubl, P., Aydin, A.  
2002; 29 (24)
- **Alteration and fracturing of siliceous mudstone during in situ combustion, Orcutt field, California** *JOURNAL OF PETROLEUM SCIENCE AND ENGINEERING*  
Lore, J. S., Eichhubl, P., Aydin, A.  
2002; 36 (3-4): 169-182
- **Fault structure and related basins of the North Aegean Sea and its surroundings** *TECTONICS*  
Koukouvelas, I. K., Aydin, A.  
2002; 21 (5)
- **Anatomy of a normal fault with shale smear: Implications for fault seal** *AAPG BULLETIN*  
Aydin, A., Eyal, Y.  
2002; 86 (8): 1367-1381
- **Computing permeability of fault zones in eolian sandstone from outcrop measurements** *AAPG BULLETIN*  
Jourde, H., Flodin, E. A., Aydin, A., Durlafsky, L. J., Wen, X. H.  
2002; 86 (7): 1187-1200
- **Surface ruptures of the 17 August and 12 November 1999 Izmit and Duzce earthquakes in northwestern Anatolia, Turkey: Their tectonic and kinematic significance and the associated damage** *BULLETIN OF THE SEISMOLOGICAL SOCIETY OF AMERICA*  
Aydin, A., Kalafat, D.  
2002; 92 (1): 95-106
- **Orthogonal cross joints: do they imply a regional stress rotation?** *JOURNAL OF STRUCTURAL GEOLOGY*  
Bai, T. X., Maerten, L., Gross, M. R., Aydin, A.  
2002; 24 (1): 77-88
- **Concentration of shearing deformation related to changes in strike of monoclinial fold axes: the Waterpocket monocline, Utah** *JOURNAL OF STRUCTURAL GEOLOGY*  
Roznovsky, T. A., Aydin, A.  
2001; 23 (10): 1567-1579
- **A deterministic methodology for prediction of fracture distribution in basaltic multiflows** *JOURNAL OF GEOPHYSICAL RESEARCH-SOLID EARTH*  
Lore, J., Aydin, A., Goodson, K. E.  
2001; 106 (B4): 6447-6459
- **Opening-mode fracture in siliceous mudstone at high homologous temperature - Effect of surface forces** *GEOPHYSICAL RESEARCH LETTERS*  
Eichhubl, P., Aydin, A., Lore, J.  
2001; 28 (7): 1299-1302
- **Representation of Fault Zone Permeability in Reservoir Flow Models** *SPE Annual Technical Conference and Exhibition*  
Flodin, E. A., Aydin, A., Durlafsky, L. J., Yeten, B.  
2001

- **Viscoelastic thermal stress in cooling basalt flows** *JOURNAL OF GEOPHYSICAL RESEARCH-SOLID EARTH*  
Lore, J., Gao, H. J., Aydin, A.  
2000; 105 (B10): 23695-23709
- **Fractures, faults, and hydrocarbon entrapment, migration and flow** *Symposium on Advances in Understanding and Modelling of Hydrocarbon Migration*  
Aydin, A.  
ELSEVIER SCI LTD.2000: 797-814
- **Joints at high angles to normal fault strike: an explanation using 3-D numerical models of fault-perturbed stress fields** *JOURNAL OF STRUCTURAL GEOLOGY*  
Kattenhorn, S. A., Aydin, A., Pollard, D. D.  
2000; 22 (1): 1-23
- **Three-dimensional visualization of normal fault segmentation and its implication for fault growth** *The Leading Edge*  
Koledoye, B., Aydin, A., May, E.  
2000; 19: 692-701
- **Fluid flow in discrete joint sets: Field observations and numerical simulations** *JOURNAL OF GEOPHYSICAL RESEARCH-SOLID EARTH*  
Taylor, W. L., Pollard, D. D., Aydin, A.  
1999; 104 (B12): 28983-29006
- **Interlayer slip and joint localization in the East Kaibab Monocline, Utah: field evidence and results from numerical modelling** *Geological Society, London, Special Publications*  
Cooke, M. L., Mollema, P. N., Pollard, D. D., Aydin, A.  
1999; 169 (1): 23-49
- **Outcrop-Aided Characterization of a Faulted Hydrocarbon Reservoir: Arroyo Grande Oil Field, California, USA** *Faults and Subsurface Fluid Flow in the Shallow Crust*  
Antonellini, M., M., Aydin, A. and , A., Orr, L., L.  
edited by Haneberg, W. C., Mozley, P. S., Moore, J. C., Goodwin, L. B.  
American Geophysical Union, Washington, D. C..1999
- **Fault-controlled hydrocarbon pathways in the Monterey Formation, California** *AAPG BULLETIN*  
Dholakia, S. K., Aydin, A., Pollard, D. D., Zoback, M. D.  
1998; 82 (8): 1551-1574
- **Deformation pattern around the conjoining strike-slip fault systems in the Basin and Range, southeast Nevada: The role of strike-slip faulting in basin formation and inversion** *TECTONICS*  
Cakir, M., Aydin, A., Campagna, D. J.  
1998; 17 (3): 344-359
- **Evidence for large-scale strike-slip faulting on Venus** *GEOLOGY*  
Koenig, E., Aydin, A.  
1998; 26 (6): 551-554
- **Simulation of Transient Well-Test Signatures for Geologically Realistic Faults in Sandstone Reservoirs** *SPE Journal*  
Matthai, S. K., Aydin, A., Pollard, D. D., Roberts, S.  
1998; 3 (1)
- **Numerical simulation of departures from radial drawdown in a faulted sandstone reservoir with joints and deformation bands** *Geological Society, London, Special Publications*  
Matthai, S. K., Aydin, A., Pollard, D. D., Roberts, S. G.  
1998; 147 (1): 157-191
- **The relationship between faults and pressure solution seams in carbonate rocks and the implications for fluid flow** *Geological Society, London, Special Publications*  
Peacock, D. P., Fisher, Q. J., Willemse, E. M., Aydin, A.  
1998; 47 (1): 105-115
- **Nucleation and growth of strike-slip faults in limestones from Somerset, UK** *JOURNAL OF STRUCTURAL GEOLOGY*  
Willemse, E. J., Peacock, D. C., Aydin, A.



- 1997; 19 (12): 1461-1477
- **Mechanics of vein, fault and solution surface formation in the Appalachian Valley and Ridge, northeastern Tennessee, USA: Implications for fault friction, state of stress and fluid pressure** *JOURNAL OF STRUCTURAL GEOLOGY*  
Ohlmacher, G. C., Aydin, A.  
1997; 19 (7): 927-944
  - **Elastic stress relaxation: A mechanism for opposite sense of secondary faulting with respect to a major fault** *TECTONOPHYSICS*  
Du, Y., Aydin, A.  
1996; 257 (2-4): 175-188
  - **Is the San Andreas big bend responsible for the Landers earthquake and the eastern California shear zone?** *GEOLOGY*  
Du, Y. J., Aydin, A.  
1996; 24 (3): 219-222
  - **Three-dimensional analyses of slip distributions on normal fault arrays with consequences for fault scaling** *JOURNAL OF STRUCTURAL GEOLOGY*  
Willemsse, E. J., Pollard, D. D., Aydin, A.  
1996; 18 (2-3): 295-309
  - **PROGRESSIVE DEFORMATION AND FRACTURE PATTERNS DURING FORELAND THRUSTING IN THE SOUTHERN APPALACHIANS** *AMERICAN JOURNAL OF SCIENCE*  
Ohlmacher, G. C., Aydin, A.  
1995; 295 (8): 943-987
  - **SHEAR FRACTURE PATTERNS AND CONNECTIVITY AT GEOMETRIC COMPLEXITIES ALONG STRIKE-SLIP FAULTS** *JOURNAL OF GEOPHYSICAL RESEARCH-SOLID EARTH*  
Du, Y. J., Aydin, A.  
1995; 100 (B9): 18093-18102
  - **KINEMATICS AND TIMING OF TERTIARY EXTENSION IN THE WESTERN LAKE MEAD REGION, NEVADA - DISCUSSION** *GEOLOGICAL SOCIETY OF AMERICA BULLETIN*  
Cakir, M., Aydin, A.  
1995; 107 (8): 987-990
  - **BASIN GENESIS ASSOCIATED WITH STRIKE-SLIP FAULTING IN THE BASIN AND RANGE, SOUTHEASTERN NEVADA - REPLY** *TECTONICS*  
Campagna, D. J., Aydin, A.  
1995; 14 (4): 1058-1059
  - **EFFECT OF FAULTING ON FLUID-FLOW GEOMETRY AND SPATIAL-DISTRIBUTION** *AAPG BULLETIN-AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS*  
Antonellini, M., Aydin, A.  
1995; 79 (5): 642-671
  - **UNWEAVING THE JOINTS IN ENTRADA SANDSTONE, ARCHES NATIONAL-PARK, UTAH, USA** *JOURNAL OF STRUCTURAL GEOLOGY*  
CRUIKSHANK, K. M., Aydin, A.  
1995; 17 (3): 409-421
  - **SURFACE RUPTURE AT A FAULT BEND - THE 28-JUNE-1992 LANDERS, CALIFORNIA, EARTHQUAKE** *BULLETIN OF THE SEISMOLOGICAL SOCIETY OF AMERICA*  
Aydin, A., Du, Y. J.  
1995; 85 (1): 111-128
  - **MICROSTRUCTURE OF DEFORMATION BANDS IN POROUS SANDSTONES AT ARCHES NATIONAL-PARK, UTAH** *JOURNAL OF STRUCTURAL GEOLOGY*  
ANTONELLINI, M. A., Aydin, A., Pollard, D. D.  
1994; 16 (7): 941-959
  - **ROLE OF FRACTURE LOCALIZATION IN ARCH FORMATION, ARCHES-NATIONAL-PARK, UTAH** *GEOLOGICAL SOCIETY OF AMERICA BULLETIN*  
CRUIKSHANK, K. M., Aydin, A.

1994; 106 (7): 879-891

- **BASIN GENESIS ASSOCIATED WITH STRIKE-SLIP FAULTING IN THE BASIN AND RANGE, SOUTHEASTERN NEVADA** *TECTONICS*  
Campagna, D. J., Aydin, A.  
1994; 13 (2): 327-?
- **EFFECT OF FAULTING ON FLUID-FLOW IN POROUS SANDSTONES - PETROPHYSICAL PROPERTIES** *AAPG BULLETIN-AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS*  
Antonellini, M., Aydin, A.  
1994; 78 (3): 355-377
- **PETROPHYSICAL STUDY OF FAULTS IN SANDSTONE USING PETROGRAPHIC IMAGE-ANALYSIS AND X-RAY COMPUTERIZED-TOMOGRAPHY** *PURE AND APPLIED GEOPHYSICS*  
Antonellini, M., Aydin, A., Pollard, D. D., DONFRO, P.  
1994; 143 (1-3): 181-201
- **INCREMENTAL GROWTH OF A SHALLOW HYDRAULIC FRACTURE AT A WASTE REMEDIATION SITE, OAKBROOK, ILLINOIS FROM INVERSION OF ELEVATION CHANGES** *34th U.S. Symposium on Rock Mechanics*  
Du, Y. J., Aydin, A., Murdoch, L.  
PERGAMON-ELSEVIER SCIENCE LTD.1993: 1273-79
- **ROTATION OF STRESS AND BLOCKS IN THE LAKE MEAD, NEVADA, FAULT SYSTEM** *GEOPHYSICAL RESEARCH LETTERS*  
Ron, H., Nur, A., Aydin, A.  
1993; 20 (16): 1703-1706
- **THE MAXIMUM DISTORTIONAL STRAIN-ENERGY DENSITY CRITERION FOR SHEAR FRACTURE PROPAGATION WITH APPLICATIONS TO THE GROWTH PATHS OF EN-ECHELON FAULTS** *GEOPHYSICAL RESEARCH LETTERS*  
Du, Y. J., Aydin, A.  
1993; 20 (11): 1091-1094
- **EFFECT OF THERMAL REGIME ON GROWTH INCREMENT AND SPACING OF CONTRACTION JOINTS IN BASALTIC LAVA** *JOURNAL OF GEOPHYSICAL RESEARCH-SOLID EARTH*  
DeGraff, J. M., Aydin, A.  
1993; 98 (B4): 6411-6430
- **Stress transfer and decomposition during three sequential earthquakes along the central Calaveras fault, California** *Journal of Geophysical Research*  
Du, Y., Aydin, A.  
1993; 98: 9947-9962
- **Stress field rotation or block rotation: an example from the Lake Mead fault system** *Annali di Geofisica*  
Ron, H., Nur, A., Aydin, A.  
1993; 35: 65-73
- **Northward progression of slip and stress transfer associated with three sequential earthquakes along the central Calaveras fault** *California Division of Mines and Geology, Special Publication*  
Du, Y., Aydin, A.  
1993; 113: 241-247
- **Effect of cooling rate on growth increments and spacing of thermal contraction cracks** *Journal of Geophysical Research*  
DeGraff, J. M., Aydin, A.  
1993; 98: 6411-6430
- **RIGHT-LATERAL-REVERSE SURFACE RUPTURE ALONG THE SAN-ANDREAS AND SARGENT FAULTS ASSOCIATED WITH THE OCTOBER 17, 1989, LOMA-PRIETA, CALIFORNIA, EARTHQUAKE** *GEOLOGY*  
Aydin, A., Johnson, A. M., Fleming, R. W.  
1992; 20 (12): 1063-1067
- **THE ROLE OF COMPRESSION-INDUCED TENSION IN THE PROPAGATION OF HYDROFRACTURES - IMPLICATIONS FOR INSITU STRESS MEASUREMENTS AT SHALLOW DEPTHS** *INTERNATIONAL JOURNAL OF ROCK MECHANICS AND MINING SCIENCES & GEOMECHANICS ABSTRACTS*  
Du, Y., Aydin, A.

1992; 29 (6): 589-593

- **COMPARISON OF VARIOUS INVERSION TECHNIQUES AS APPLIED TO THE DETERMINATION OF A GEOPHYSICAL DEFORMATION MODEL FOR THE 1983 BORAH PEAK EARTHQUAKE** *BULLETIN OF THE SEISMOLOGICAL SOCIETY OF AMERICA*  
Du, Y. J., Aydin, A., Segall, P.  
1992; 82 (4): 1840-1866
- **3-DIMENSIONAL CHARACTERISTICS OF DIKE INTRUSION ALONG THE NORTHERN ICELAND RIFT FROM INVERSION OF GEODETIC DATA** *TECTONOPHYSICS*  
Du, Y. J., Aydin, A.  
1992; 204 (1-2): 111-121
- **TERTIARY UPLIFT AND SHORTENING IN THE BASIN AND RANGE - THE ECHO HILLS, SOUTHEASTERN NEVADA** *GEOLOGY*  
Campagna, D. J., Aydin, A.  
1991; 19 (5): 485-488
- **INTERACTION OF MULTIPLE CRACKS AND FORMATION OF ECHELON CRACK ARRAYS** *INTERNATIONAL JOURNAL FOR NUMERICAL AND ANALYTICAL METHODS IN GEOMECHANICS*  
Du, Y., Aydin, A.  
1991; 15 (3): 205-218
- **CHARACTERISTICS OF JOINT PROPAGATION ACROSS LAYER INTERFACES IN SEDIMENTARY-ROCKS** *JOURNAL OF STRUCTURAL GEOLOGY*  
HELGESON, D. E., Aydin, A.  
1991; 13 (8): 897-911
- **FORMATION OF INTERIOR BASINS ASSOCIATED WITH CURVED FAULTS IN ALASKA** *TECTONICS*  
Schultz, R. A., Aydin, A.  
1990; 9 (6): 1387-1407
- **EFFECT OF MECHANICAL INTERACTION ON THE DEVELOPMENT OF STRIKE-SLIP FAULTS WITH ECHELON PATTERNS** *JOURNAL OF STRUCTURAL GEOLOGY*  
Aydin, A., Schultz, R. A.  
1990; 12 (1): 123-129
- **Fault-normal dilation in pull-apart basins: implications for the relationship between strike-slip faults and volcanic activity** *Annales Tectonicae*  
Aydin, A., Schulz, R. A., Campagna, D.  
1990; IV: 45-52
- **USE OF JOINT-GROWTH DIRECTIONS AND ROCK TEXTURES TO INFER THERMAL REGIMES DURING SOLIDIFICATION OF BASALTIC LAVA FLOWS** *JOURNAL OF VOLCANOLOGY AND GEOTHERMAL RESEARCH*  
DeGraff, J. M., Long, P. E., Aydin, A.  
1989; 38 (3-4): 309-324
- **Fault Segmentation and Controls of Rupture Initiation and Termination** *U.S. Geological Survey Open File Report*  
Aydin, A., Schulz, R. A.  
U.S. Geological Survey.1989: 47-66
- **PROGRESS IN UNDERSTANDING JOINTING OVER THE PAST CENTURY** *GEOLOGICAL SOCIETY OF AMERICA BULLETIN*  
Pollard, D. D., Aydin, A.  
1988; 100 (8): 1181-1204
- **EVOLUTION OF POLYGONAL FRACTURE PATTERNS IN LAVA FLOWS** *SCIENCE*  
Aydin, A., DeGraff, J. M.  
1988; 239 (4839): 471-476
- **Discontinuities along thrust faults and the cleavage duplexes** *Geological Society of America Special Publication*  
Aydin, A.  
1988; 222: 223-232
- **SURFACE-MORPHOLOGY OF COLUMNAR JOINTS AND ITS SIGNIFICANCE TO MECHANICS AND DIRECTION OF JOINT GROWTH** *GEOLOGICAL SOCIETY OF AMERICA BULLETIN*

- 
- DeGraff, J. M., Aydin, A.  
1987; 99 (5): 605-617
- **Surface features of columnar joints and their significance to mechanics and direction of joint growth** *Geological Society of America Bulletin*  
DeGraff, J. M., Aydin, A.  
1987; 99: 605-617
  - **STRIKE-SLIP FAULTING AND BLOCK ROTATION IN THE LAKE MEAD FAULT SYSTEM** *GEOLOGY*  
Ron, H., Aydin, A., Nur, A.  
1986; 14 (12): 1020-1023
  - **The types and role of stepovers in strike-slip tectonics** *Society of Economic Paleontologists and Mineralogists Special Publication*  
Aydin, A., Nur, A.  
1985: 35-45
  - **DIVERSE PLIOCENE-QUATERNARY TECTONICS IN A TRANSFORM ENVIRONMENT, SAN-FRANCISCO BAY REGION, CALIFORNIA** *GEOLOGICAL SOCIETY OF AMERICA BULLETIN*  
Aydin, A., Page, B. M.  
1984; 95 (11): 1303-1317
  - **PROPAGATION AND LINKAGE OF OCEANIC RIDGE SEGMENTS** *JOURNAL OF GEOPHYSICAL RESEARCH*  
Pollard, D. D., Aydin, A.  
1984; 89 (NB12): 17-28
  - **EVOLUTION OF PULL APART BASINS AND THEIR SCALE INDEPENDENCE** *TECTONICS*  
Aydin, A., Nur, A.  
1982; 1 (1): 91-105
  - **The East Bay Hills; a compressional domain resulting from interaction between the Calaveras and Hayward-Rodgers Creek faults** *California Div. of Mines & Geology, Special Publication*  
Aydin, A.  
1982; 62: 11-27
  - **The number and orientation of fault sets in the field and in laboratory** *Geology*  
Aydin, A., Reches, Z.  
1982; 10: 107-112
  - **SMALL FAULTS FORMED AS DEFORMATION BANDS IN SANDSTONE** *PURE AND APPLIED GEOPHYSICS*  
Aydin, A.  
1978; 116 (4-5): 913-930
  - **DEVELOPMENT OF FAULTS AS ZONES OF DEFORMATION BANDS AND AS SLIP SURFACES IN SANDSTONE** *PURE AND APPLIED GEOPHYSICS*  
Aydin, A., Johnson, A. M.  
1978; 116 (4-5): 931-942