



Atilla Aydin

Professor of Geology in the School of Earth Sciences, Emeritus
Geological Sciences

Bio

ACADEMIC APPOINTMENTS

- Professor Emeritus, Geological Sciences

ADMINISTRATIVE APPOINTMENTS

- Professor (Research) Emeritus, Stanford University, (2015- present)
- Visiting Professor, University of Hawaii, Manoa., (2001-2001)
- Professor (Research), Department of Geological & Environmental Sciences, Stanford University, (1997-2015)
- Associate Professor (Research), Dept. of Applied Earth Sciences & Dept. of Geol. & Env. Sciences, Stanford University, (1991-1997)
- Visiting Scientist and Visiting Professor, Dept. of Applied Earth Sciences and Dept. of Geophysics,, Stanford University, (1988-1988)
- Associate Professor, Dept. of Earth and Atmospheric Sciences, Purdue University, (1987-1991)
- Assistant Professor, Dept. of Earth and Atmospheric Sciences, Purdue University, (1982-1987)
- Post-doctoral Fellow, Department of Geophysics, Stanford University, (1980-1981)
- Visiting Scientist, Applied Mathematics Department, Weizmann Institute of Sciences, Israel, (1980-1980)
- Assistant Professor, Geology Dept., Istanbul Technical University, Turkey, (1978-1980)

HONORS AND AWARDS

- Fellow, Geological Society of America (2000)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Workshop, "Rock fracture and fractured reservoirs", Ankara, Turkey., Turkish Petroleum Corporation (2012 - 2012)
- Workshop, "Rock fracture and its application to subsurface fluid flow and earthquakes", Chulalongkorn University, Thailand (2012 - 2012)
- Session organizer and co-chair, American Geophysical Union (2011 - 2011)
- Invited speaker, San Jose State University Geology Club (2009 - 2009)
- Invited speaker, American Geophysical Union (2006 - 2009)
- Invited speaker, North Rio Grande Federal University, Brazil (2005 - 2005)
- Co-organizer and co-chair, GSA Annual meeting session on "Fracturing and faulting of clastic rocks...", Geological Society of America (2005 - 2005)
- Session organizer and co-chair, AAPG Convention, April 19-21, Dallas, TX, American Association of Petroleum Geologists (2004 - 2004)
- Member, Scientific Committee, Ankara, Turkey, International Conference on the North Anatolian Fault, East Anatolian Fault, and Dead Sea Fault Systems, Ankara, Turkey (2003 - 2003)
- Member, Scientific Committee, Geological Modeling 2004 International Meeting, GeoMod2004 (2003 - 2004)

- Session chair, European Association of Geologists and Engineers, International Meeting on Fault and Top Seals, Montpellier, France, European Association of Geoscientists and Engineers (2003 - 2003)
- Representative, The Engineering Geology Program, Association of Engineering Geology, Bay Area Chapter (2002 - 2004)
- Invited speaker, Conference on Rock Deformation, Gordon Research Conference on Rock Deformation, Ciocco, Italy (2002 - 2002)
- Member, Graduate Admission Committee, Department of Geological and Environmental Sciences., Stanford University (2001 - 2003)
- Invited speaker, SPE Annual Technical Conference and Exhibition, New Orleans, LA., Society of Petroleum Engineers (2001 - 2001)
- Invited speaker, University of Hawaii, Manoa, HI (2001 - 2001)
- Invited speaker, Technical University of Istanbul, Turkey (2001 - 2001)
- Technical session co-organizer and co-chair, AGU Annual Meet., San Francisco, CA., American Geophysical Union (2001 - 2001)
- Invited speaker, Fractured Reservoir Symposium, Conoco Inc., Houston, TX (2000 - 2000)
- Lecturer, Hydrocarbon Migration and Flow Workshop, Japan National Oil Company (JNOC), Chiba, Japan (2000 - 2000)
- Invited speaker, Dia Consulting & Fukada Geological Institute, Tokyo, Japan (2000 - 2000)
- Invited presenter, Apex Petroleum, Denver, CO (2000 - 2000)
- Invited speaker, Israel Geological Survey, Jerusalem, Israel (2000 - 2000)
- Director, Shale Smear Project (Industrial Affiliates Program), Stanford University (1996 - 2002)
- Co-Director, Rock Fracture Project, (Industrial Affiliates Program), Stanford University (1991 - present)

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

- Arvid M. Johnson (1938-2018): A trailblazer in geomechanics using physical processes

- Aydin, A., Reches, Z., Holzhausen, G., Neavel, K.
American Geophysical Union. Eos.
2019 ; Eos, (100): online
- **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 Jossineau, 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 Joussineau, 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 CO₂-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 Joussineau, 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., Durlofsky, 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., Durlinsky, 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., Durlinsky, 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.
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