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**FORELAND PROPAGATION OF FOLDING AND
STRUCTURE OF THE MOUNTAIN FRONT FLEXURE
IN THE PUSHT-E KUH ARC
(ZAGROS, IRAN)**

Hadi Emami, 2008

REFERENCES

REFERENCES

- Agard, P., J. Omrani, J. Jolivet, and F. Mouthereau, 2005, Convergence history across Zagros (Iran): constraints from collisional and earlier deformation: *International Journal of Earth Sciences (Geol Rundsch)*, v. 94, p. 401–419.
- Aghanabati, A., 2004, *Geology of Iran.*, Geological survey of Iran (in Persian), 586 pp.
- Ahmadhadi, F., O. Lacombe, and J. M. Daniel, 2007, Early reactivation of basement faults in central Zagros (SW Iran): Evidence from pre-folding fracture patterns in Asmari formation and lower tertiary paleogeography, *in* O. L. Lacombe, J.; Roure, F.; Verges, J., ed., *Thrust Belts and Foreland Basins From Fold Kinematics to Hydrocarbon Systems: Frontiers in Earth Sciences*, Springer, p. Chapter 11, 205-228.
- Alavi, M., 1994, Tectonics of the Zagros orogenic belt of Iran: new data and interpretations: *Tectonophysics*, v. 229, p. 211-238.
- Babaei, A., H. A. Babaie, and M. Arvin, 2005, Tectonic evolution of the Neyriz ophiolite, Iran: an accretionary prism model: *Ofioliti* v. 30, p. 65-74.
- Bahroudi, A., and C. J. Talbot, 2003, The configuration of the basement beneath the Zagros Basin: *Journal of Petroleum Geology*, v. 26, p. 257-282.
- Bahroudi, A., and H. A. Koyi, 2004, Tectono-sedimentary framework of the Gachsaran Formation in the Zagros foreland basin: *Marine and Petroleum Geology*, v. 21, p. 1295-1310.
- Barrier, L., T. Nalpas, D. Gapais, J. N. Proust, A. Casas, and S. Bourquin, 2002, Influence of syntectonic sedimentation on thrust geometry. Field examples from the Iberian Chain (Spain) and analogue modelling, *in* M. Marzo, J. A. Muñoz, and J. Vergés, eds., *Sedimentary Geology on Growth Strata*, v. 146 (1-2), p. 91-104.
- Berberian, F., I. D. Muir, R. J. Pankhurst, and M. Berberian, 1982, Late Cretaceous and Early Miocene Andean-type plutonic activity in northern Makran and Central Iran: *Jour. Geol. Soc. London*, v. 139, p. 605-614.
- Berberian, M., 1995, Master "blind" thrust faults hidden under the Zagros folds: active basement tectonics and surface morphotectonics: *Tectonophysics*, v. 241, p. 193-224.
- Berberian, M., and G. C. P. King, 1981, Towards a paleogeography and tectonic evolution of Iran: *Canadian Journal of Earth Sciences*, v. 18, p. 210-265.
- Berg, R. R., 1962, Mountain flank thrusting in Rocky Mountain foreland, Wyoming and Colorado: *AAPG Bulletin*, v. 46, p. 2019-2032.

- Beydoun, Z. R., 1991, Arabian Plate Hydrocarbon Geology and Potential. A Plate Tectonic Approach, v. 33, AAPG Studies in Geology, 33, 77, 77 p.
- Beydoun, Z. R., M. W. Hughes Clarke, and R. Stoneley, 1992, Petroleum in the Zagros Basin: A Late Tertiary Foreland Basin Overprinted onto the Outer Edge of a Vast Hydrocarbon-Rich Paleozoic-Mesozoic Passive-Margin Shelf, *in* R. W. Maequeen, and D. H. Lackie, eds., Foreland Basins and Fold Belts, American Association of Petroleum Geologists Memoir 55, p. 309-339.
- Blanc, E. J.-P., M. B. Allen, S. Inger, and H. Hassani, 2003, Structural styles in the Zagros Simple Folded Zone, Iran: *Journal of the Geological Society, London*, v. 160, p. 401-412.
- Bordenave, M. L., and J. A. Hegre, 2005, The influence of tectonics on the entrapment of oil in the Dezful Embayment, Zagros Foldbelt, Iran: *Journal of Petroleum Geology*, v. 28, p. 339-368.
- Braud, J., 1987 La suture du Zagros au niveau de Kermanshah (Kurdistan iranien): reconstitution paléogéographique, évolution géodynamique, magmatique et structurale, Universtié Paris-Sud, 430 p. p.
- Brown, S. G., 1983, Sequential development of the fold-thrust model of foreland deformation *in* J. D. Lowell, ed., Rocky Mountain foreland basins and uplifts: Denver, Colorado, Rocky Mountain Association of Geologist, p. 57-64.
- Burbank, D. W., and Reynolds, R.G.H., 1988, Stratigraphic keys to the timing of thrusting in terrestrial foreland basins: Applications to the Northwestern Himalaya, *in* K. L. Kleinspehn, and Paola, C., ed., New Perspectives in Basin Analysis: New York, Springer-Verlag, p. 331-351.
- Burbank, D. W., J. Vergés, J. A. Muñoz, and P. A. Bentham, 1992, Coeval hindward- and forward-imbricating thrusting in the central southern Pyrenees, Spain: timing and rates of shortening and deposition: *Geological Society of America Bulletin*, v. 104, p. 1-18.
- Butler, R. F., 1992 Paleomagnetism: Boston Blackwell Science, 319, 319 p.
- Cande, S. C., and D. V. Kent, 1992, A new geomagnetic polarity time scale for the Late Cretaceous and Cenozoic: *J. geophys. Res.*, v. 97, p. 13,917-13,951.
- Cande, S. C., and D. V. Kent, 1995, Revised calibration of the geomagnetic polarity timescale for the Late Cretaceous and Cenozoic: *Journal of Geophysical Research*, v. 100, p. 6093-6095.
- Colman-Sadd, S. P., 1978, Fold development in Zagros simply folded belt, southwest Iran: *The American Association of Petroleum Geologists Bulletin*, v. 62, p. 984-1003.
- Davy, P., and P. R. Cobbold, 1991, Experiments on shortening of a 4-layer model of the continental lithosphere: *Tectonophysics*, v. 188, p. 1-25.

- Dercourt, J., L. P. Zonenshain, L. E. Ricou, V. G. Kazmin, X. Le Pichon, A. L. Knipper, C. Grandjacquet, I. M. Sbertshikov, J. Geysant, C. Lepvrier, D. H. Pechersky, Boulin., J. C. Sibuet, L. A. Savostini, O. Sorokhtin, M. Westphal, M. L. Bazhenov, J. P. Lauer, and B. Biju-Duval, 1986, Geological evolution of the Tethys belt from the Atlantic to the Pamir since the Lias: *Tectonophysics*, v. 123, p. 241-315.
- Dewey, J. F., W. C. Pitman, W. B. F. Ryan, and J. Bonnin, 1973, Plate tectonics and the evolution of the Alpine systems: *Geological Society of America Bulletin*, v. 84, p. 3137-3180.
- Dunnington, H. V., 1968, Salt-tectonic features of northern Iraq: *Geological Society of America Special Paper*, v. 88, p. 183-227.
- Edgell, H. S., 1996, Salt tectonism in the Persian Gulf Basin, *in* G. I. Alsop, D. Blundell, and I. Davison, eds., *Salt Tectonics*, Geological Society Special Publication, 100, p. 129-151.
- Emami, H., J. Vergés, T. Nalpas, P. Gillespie, and E. P. Blanc, in press, Structure of the Mountain Front Flexure along the Anaran anticline in the Pusht-e Kuh Arc (NW Zagros, Iran): Insights from sand box models, *in* P. Leturmy, and C. Robin, eds., *Tectonic and Stratigraphic evolution of Zagros and Makran during the Mesozoic-Cenozoic*, Geological Society of London Special Volume.
- Fakhari, M. D., G. J. Axen, B. K. Horton, J. Hassanzadeh, and A. Amini, 2008, Revised age of proximal deposits in the Zagros foreland basin and implications for Cenozoic evolution of the High Zagros: *Tectonophysics*, v. 451, p. 170-185.
- Fakhari, M., 1985, Khurramabad Geological Compilation Map 1/100,000 (Sheet 20813W). National Iranian Oil Company.
- Fakhari, M., and B. Soleimany, 2003, Early anticlines of the Zagros Fold Belt, South West Iran: 2003 GSA Seattle Annual Meeting (November 2–5, 2003), Paper No. 156-23.
- Falcon, N. L., 1961, Major earth-flexuring in the Zagros Mountains of south-west Iran: *Quarterly Journal of the Geological Society of London*, v. 117, p. 367-376.
- Falcon, N. L., 1967, The geology of the north-east margin of the Arabian basement shield: *Advancement Science*, v. 24, p. 1-12.
- Falcon, N. L., 1974, Southern Iran: Zagros Mountains, *in* A. M. Spencer, ed., *Mesozoic-Cenozoic Orogenic Belts. Data for Orogenic Studies*, v. 4, Geological Society of London, Special Publication, p. 199-211.
- Faugère, E., and J. P. Brun, 1984, Modélisation expérimentale de la distension continentale. : *Compte-Rendus de l'Académie des Sciences de Paris*, v. 299, p. 365-370.

- Fernández, O., J. A. Muñoz, P. Arbués, O. Falivene, and M. Marzo, 2004, Three-dimensional reconstruction of geological surfaces: An example of growth strata and turbidite systems from the Ainsa basin (Pyrenees, Spain): AAPG Bulletin, v. 88, p. 1049-1068.
- Finch, E., S. Hardy, and R. Gawthorpe, 2003, Discrete element modelling of contractional fault-propagation folding above rigid basement fault blocks: Journal of Structural Geology, v. 25, p. 515-528.
- Foose, R., Wise, D. U. and Garbarini, G., 1961, Structural geology of the Beartooth Mountains, Montana and Wyoming: Geol. Soc. America Bull., v. 72, p. 1143-1172.
- Friedman, M., J. Handin, J. M. Logan, K. D. Min, and D. W. Stearns, 1976, Experimental folding of rocks under confining pressure: Part III. Faulted drape folds in multilithologic layered specimens: Geological Society of America Bulletin, v. 87, p. 1049-1066.
- Gansser, A., 1992, The enigma of the Persian dome inclusions: *Eclogae Geologicae Helveticae*, v. 85, p. 825-846.
- Ghavidel-Syooki, M., 1997, Palynostratigraphy and palaeogeography of Early Permian strata in the Zagros Basin, Southeast-Southwest Iran.: Journal of Sciences Islamic Republic of Iran, v. 8, p. 243-262.
- Gidon, M., F. Berthier, J.-P. Billiautt, B. Halbronn, and P. Maurizot, 1974, Sur quelques caractères de la tectonique néocrétacée dans la région de Borudjerd (Zagros oriental, Iran): C. R. Acad. Sci. Paris, v. 278, p. 577-580.
- Golonka, J., 2004, Plate tectonic evolution of the southern margin of Eurasia in the Mesozoic and Cenozoic: Tectonophysics, v. 381, p. 235-273.
- Gradstein, F.M., Ogg, J. G. And Smith, A. G. (Eds.), 2004. A Geological Time Scale 2004, 589 pp., Cambridge University Press.
- Groshong, R. H., 1999, 3-D Structural Geology: Berlin, Springer-Verlag, 324 pp
- Hailwood, E. A., 1989, Magnetostratigraphy, v. 19, Geological Society of London Special Report
- Hardy, S., and E. Finch, 2006, Discrete element modelling of the influence of cover strength on basement-involved fault-propagation folding: Tectonophysics, v. 415, p. 225-238.
- Harzhauser, M., A. Kroh, O. Mandic, W. E. Piller, U. Göhlich, M. Reuter, and B. Berning, 2007, Biogeographic responses to geodynamics: A key study all around the Oligo-Miocene Tethyan Seaway: Zoologischer Anzeiger - A Journal of Comparative Zoology, v. 246, p. 241-256.

- Haynes, S. J., and H. McQuillan, 1974, Evolution of the Zagros Suture Zone, Southern Iran: Geological Society of America Bulletin, v. 85, p. 739-744.
- Heermance, R. V., J. Chen, D. W. Burbank, and C. Wang, 2007, Chronology and tectonic controls of Late Tertiary deposition in the southwestern Tian Shan foreland, NW China: Basin Research, v. 19, p. 599-632.
- Hessami, K., H. A. Koyi, C. J. Talbot, H. Tabasi, and E. Shabanian, 2001, Progressive unconformities within an evolving foreland fold-and-thrust belt, Zagros Mountains: Geological Society, London, v. 158, p. 969-981.
- Homke, S., J. Vergés, M. Garcés, H. Emami, and R. Karpuz, 2004, Magnetostratigraphy of Miocene–Pliocene Zagros foreland deposits in the front of the Push-e Kush Arc (Lurestan Province, Iran): Earth and Planetary Science Letters, v. 225, p. 397–410.
- Homke, S., J. Vergés, J. Serra-Kiel, G. Bernaola, M. Garcés, R. Karpuz, I. Sharp, M. H. Goodarzi, and I. M. Verdú, in press, Late Cretaceous–Paleocene formation of the early Zagros foreland basin: biostratigraphy and magnetostratigraphy of the Amiran, Taleh Zang and Kashkan sequence in Lurestan Province, SW Iran: Geological Society of America Bulletin.
- Hull, C. E., and H. R. Warman, 1970, Asmari Oil Fields of Iran, *in* M. T. Halbouty, ed., Geology of Giant Petroleum Fields, American Association Petroleum Geologists, Memoir 14, p. 428-437.
- Husseini, M. L., 1988, The Arabian Infracambrian extensional system: Tectonophysics, v. 148, p. 93-103.
- Iranian Oil Operating Companies (IOOC), 1969, 1:1000000 scale Geological Map of South-West Iran.
- Irving, E., 1964, Paleomagnetism and its application to geological and geophysical problems: Wiley, New York, 399 p.
- Jackson, J. A., T. Fitch, and D. P. MacKenzie, 1981, Active thrusting and the evolution of the Zagros fold belt thrust and nappe tectonics, *in* K. McClay, and N. Price, eds., Geological Society of London, Special Publication, v. 9, p. 371-379.
- James, G. A., and J. G. Wynd, 1965, Stratigraphic Nomenclature of Iranian Oil Consortium Agreement Area: Bulletin of the American Association of Petroleum Geologists, v. 49, p. 2182-2245.
- Jordan, T. E., and R. N. Alonso, 1987, Cenozoic Stratigraphy and Basin Tectonics of the Andes Mountains, 20°-28° South Latitude: American Association of Petroleum Geologists Bulletin, v. 71, p. 49-64.
- Kashfi, M. S., 1980, Stratigraphy and Environmental Sedimentology of Lower Fars Group (Miocene), South-Southwest Iran: American Association of Petroleum Geologists Bulletin, v. 64, p. 2095-2107.

- Kent, P. E., 1979, The emergent Hormuz salt plugs of Southern Iran: *Journal of Petroleum Geology*, v. 2, p. 117-144.
- Kirschvink, J.L. and Chang, S.B.R., 1984. Ultrafine-grained magnetite in deep-sea sediments: possible bacterial magnetofossils, *Geology* 12, 559-562.
- Konert, G., A. M. Afifi, and S. A. Al-Hajri, 2001, Paleozoic stratigraphy and Hydrocarbon Habitat of the Arabian Plate: *GeoArabia*, v. 6, p. 407-442.
- Koop, W. J., and R. Stoneley, 1982, Subsidence history of the Middle East Zagros basin, Permian to Recent, *in* P. E. Kent, M. P. Bott, D. P. McKenzie, and C. A. William, eds., *Philosophical Transactions of Royal Society London*, v. Part A, 305, p. 149-168.
- Krantz, R. W., 1991, Measurements of friction coefficients and cohesion for faulting and fault reactivation in laboratory models using sand and sand mixtures: *Tectonophysics*, v. 188, p. 203-207.
- Letouzey, J., B. Colletta, R. Vially, and J. C. Chermette, 1995, Evolution of Salt-Related Structures in Compressional Settings: AAPG Memoir 65 on Salt Tectonics: a global perspective, v. 65, p. 41-60.
- MacLeod, C. J., and M. Roohi, 1970, Kuh-e Varzarin Geological Compilation Map 1:100,000 scale (Sheet 29236 E). Iranian Oil Operating Companies (IOOC).
- MacLeod, J. H., 1970, Kabir Kuh Geological Compilation Map 1:100,000 scale (Sheet 29237 W). Iranian Oil Operating Companies (IOOC).
- MacLeod, J. H., 1972, Kuhdasht Geological Compilation Map 1:100,000 scale (Sheet 29235 E). Iranian Oil Operating Companies (IOOC).
- MacLeod, J. H., and Roohi, M., 1972, Mehran Geological Compilation Map 1:100,000 scale (Sheet 29236 W). Iranian Oil Operating Companies (IOOC).
- Masoudi, F., 1997, Contact metamorphism and pegmatite development in the SW of Arak, Iran., PhD thesis, The University of Leeds, UK, pp. 231.
- McFadden, B.J., 1990. A new fold test for paleomagnetic studies, *Geophysical Journal International* 103, 163-169.
- McFadden, P.L. and McElhinny, M.W., 1990. Classification of the reversal test in paleomagnetism, *Geophysical Journal International* 103, 725-729.
- McQuarrie, N., 2004, Crustal scale geometry of the Zagros fold-thrust belt, Iran: *Journal of Structural Geology*, v. 26, p. 519-535.
- McQuarrie, N., J. M. Stock, C. Verdel, and B. P. Wernicke, 2003, Cenozoic evolution of Neotethys and implications for the causes of plate motions: *Geophysical Research Letters*, v. 30, p. 2036, doi:10.1029/2003GL017992, 2003.

- McQuillan, H., 1974, Fracture patterns on Kuh-e Asmari anticline, southwest Iran: American Association of Petroleum Geologists Bulletin, v. 58, p. 236-246.
- McQuillan, H., 1991, The role of basement tectonics in the control of sedimentary facies, structural patterns and salt plug emplacements in the Zagros fold belt of Southwest Iran: Journal of Southeast Asian Earth Sciences, v. 5, p. 453-463.
- Mitra, S. and Mount, V.S., 1998. Foreland Basement-Involved Structures. American Association of Petroleum Geologists Bulletin, 82(1): 70-109.
- Mitra, S., 2003, A unified kinematic model for the evolution of detachment folds: Journal of Structural Geology, v. 25, p. 1659–1673.
- Molinaro, M., H. Zeyen, and X. Laurencin, 2005b, Lithospheric structure underneath the south-eastern Zagros Mountains, Iran: recent slab break-off?: Terra Nova, v. 17, p. 1-6; doi: 10.1111/j.1365-3121.2004.00575.x.
- Molinaro, M., J. C. Guezou, P. Leturmy, S. A. Eshraghi, and D. Frizon de Lamotte, 2004, The origin of changes in structural style across the Bandar Abbas syntaxis, SE Zagros (Iran): Marine and Petroleum Geology, v. 21, p. 735–752.
- Molinaro, M., P. Leturmy, J.-C. Guezou, D. Frizon de Lamotte, and S. A. Eshraghi, 2005a, The structure and kinematics of the south-eastern Zagros fold thrust belt; Iran: from thin-skinned to thick-skinned tectonics: Tectonics, v. 24, TC3007, p. doi:10.1029/2004TC001633.
- Motiei, H., 1994, Stratigraphy of Zagros Geological Survey of Iran, 536 p.
- Motiei, H., 1995, Petroleum Geology of Zagros. Publ. Geol. Surv. Iran (in Farsi), 589 p.
- Mouthereau, F., O. Lacombe, J. Tensi, N. Bellahsen, S. Kargar, and K. Amrouch, 2007, Mechanical constraints on the development of the Zagros folded belt (Fars), *in* O. L. Lacombe, J.; Roure, F.; Vergés, J., ed., Thrust Belts and Foreland Basins From Fold Kinematics to Hydrocarbon Systems: Frontiers in Earth Sciences, Springer, p. Chapter 13, 247-266.
- Murriss, R. J., 1980, Middle East: Stratigraphic Evolution and Oil Habitat: American Association of Petroleum Geologists Bulletin, v. 64, p. 597-618.
- Nalpas, T., and J. P. Brun, 1993, Salt flow and diapirism related to extension at crustal scale: Tectonophysics, v. 228, p. 349-362.
- Nalpas, T., D. Gapais, J. Vergés, L. Barrier, V. Gestain, G. Leroux, and D. Rouby, 2003, Effects of rate and nature of synkinematic sedimentation on the growth of compressive structures constrained by analogue models and field examples, *in* T. McCann, and A. Saintot, eds., Tracing Tectonic Deformation Using the Sedimentary Record, v. 208, Geological Society, London, Special Publications, p. 307-319.

- Nalpas, T., I. Györfi, F. Guillocheau, F. Lafont, and P. Homewood, 1999, Influence de la charge sédimentaire sur le développement d'anticlinaux synsédimentaires. Modélisation analogique et exemple de terrain (bordure sud du bassin de Jaca): Bulletin de la Société Géologique de France, v. 170, p. 733-740.
- Narr, W., and J. Suppe, 1994, Kinematics of basement-involved compressive structures: American Journal of Science, v. 294, p. 802-860.
- National Iranian Oil Company (NIOC), Aleshtar Geological Map 1:100,000 scale (Sheet 20809 W).
- National Iranian Oil Company (NIOC), Baba Heydar Geological Map 1:100,000 scale (Sheet 20822 W).
- O'B Perry, J. T., and A. Setudenia, 1967, Küh-e Kamestân Geological Compilation Map 1:100,000 (Sheet 20821E), National Iranian Oil Company (NIOC).
- OB Perry, J.T., and Setudehnia, A., 1967, Kuh-e Kamestan Geological Compilation Map 1:100,000 scale (Sheet 24471 E). Iranian Oil Operating Companies (IOOC).
- O'Brien, C. A. E., 1950, Tectonic problems of the oil field belt of southwest Iran: Proceedings of 18th International of Geological Congress, Great Britain, part 6, p. 45-58.
- Oveisi, B., J. Lavé, and P. van der Beek, 2007, Rates and processes of active folding evidenced by Pleistocene terraces at the central Zagros front (Iran), in O. L. Lacombe, J.; Roure, F.; Verges, J., ed., Thrust Belts and Foreland Basins From Fold Kinematics to Hydrocarbon Systems: Frontiers in Earth Sciences, Springer, p. Chapter 14, 267-288.
- Prucha, J. J., J. A. Graham, and R. P. Nickelsen, 1965, Basement-controlled deformation in Wyoming Province of Rocky Mountains foreland: American Association of Petroleum Geologists Bulletin, v. 49, p. 966-992.
- Ramos, E., P. Busquets, and J. Vergés, 2002, Interplay between longitudinal fluvial and transverse alluvial fan systems and growing thrusts in a piggyback basin (SE Pyrenees), in M. Marzo, J. A. Muñoz, and J. Vergés, eds., Sedimentary Geology on Growth Strata, v. 146 (1-2), Sedimentary Geology, p. 105-131.
- Ravaut, P., R. Bayer, R. Hassani, D. Rousset, and A. Al Yahya'ey, 1997, Structure and evolution of the northern Oman margin: gravity and seismic constraints over the Zagros-Makran-Oman collision zone: Tectonophysics, v. 279, p. 253-280.
- Reynolds, J. H., T. E. Jordan, N. M. Johnson, J. F. Damanti, and K. D. Tabbutt, 1990, Neogene deformation of the flat-subduction segment of the Argentine-Chilean Andes: Magnetostratigraphic constraints from Las Juntas, La Rioja province, Argentina: Geological Society of America Bulletin, v. 102, p. 1607-1622.

- Ricou, L. E., 1994, Tethys reconstructed: plates, continental fragments and their boundaries since 260 ma from central America to south-eastern Asia: *Geodinamica Acta*, v. 7, p. 169-218.
- Rögl, F., 1998, Palaeogeographic considerations for Mediterranean and Paratethys seaways (Oligocene to Miocene): *Ann. Naturhistor. Mus.Wien*, v. 99, p. 279-310.
- Rowan, M., 1997, Three-dimensional geometry and evolution of a segmented detachment fold, Mississippi Fan foldbelt, Gulf of Mexico: *Journal of Structural Geology*, Special Issue on Fault-Related Folding, v. 19, p. 463-480.
- Sans, M., and J. Vergés, 1995, Fold development related to contractional salt tectonics: southeastern Pyrenean thrust front, Spain, *in* M. P. A. Jackson, D. G. Roberts, and S. Snelson, eds., *Salt Tectonics: a global perspective*, American Association of Petroleum Geologists Memoir 65, Chapter 18, p. 369-378.
- Sattarzadeh, Y., J. W. Cosgrove, and C. Vita-Finzi, 2000, The interplay of faulting and folding during the evolution of the Zagros deformation belt, *in* J. W. Cosgrove, and M. S. Ameen, eds., *Forced folds and fractures*: Geological Society, London, Special Publications, v. 169: London, Geological Society of London, p. 187-196.
- Schlunegger, F., T. E. Jordan, and E. M. Klaper, 1997, Controls of erosional denudation in the orogen on foreland basin evolution: the Oligocene central Swiss molasse basin as an example: *Tectonics*, v. 16, p. 823-840.
- Sella, G.F., Dixon, T.H., & Mao, A.L. 2002, REVEL: A model for Recent plate velocities from space geodesy. *Journal of Geophysical Research-Solid Earth*, v. 107. B4, 2081, doi: 10.1029/2000jB000033.
- Sengör, A. C. M., A. Cin, D. B. Rowley, and S. Y. Nie, 1993, Space-time patterns of magmatism along the Tethysides: a preliminary study: *Journal of Geology*, v. 101, p. 51-84.
- Sengör, A. M. C., 1984, The Cimmeride orogenic system and the tectonics of Eurasia, *Geological Society of America Special Publication*, 195, 82, 82 p.
- Sepehr, M., and J. W. Cosgrove, 2004, Structural framework of the Zagros Fold–Thrust Belt, Iran: *Marine and Petroleum Geology*, v. 21, p. 829-843.
- Sepehr, M., J. W. Cosgrove, and M. Moieni, 2006, The impact of cover rock rheology on the style of folding in the Zagros Fold-Thrust Belt: *Tectonophysics*, v. 427, p. 265-281.
- Setudehnia A., 1967, Changuleh Geological Compilation Map 1:100,000 scale (Sheet 25466 W). Iranian Oil Operating Companies (IOOC).
- Setudehnia A., and OB Perry, J.T., 1967, Dehluran Geological Compilation Map 1:100,000 scale (Sheet 25467 W). Iranian Oil Operating Companies (IOOC).

- Setudehnia, A., 1967, Kuh-e Anaran Geological Compilation Map 1:100,000 scale (Sheet 25466 E). Iranian Oil Operating Companies (IOOC).
- Setudehnia, A., 1978, The Mesozoic sequence in southwest Iran and adjacent areas: *Journal of Petroleum Geology*, v. 1, p. 3-42.
- Sharp, I. R., R. L. Gawthorpe, J. R. Underhill, and S. Gupta, 2000, Fault-propagation folding in extensional settings: Examples of structural style and synrift sedimentary response from the Suez rift, Sinai, Egypt: *Geological Society of America Bulletin*, v. 112, p. 1877-1899.
- Sherkati, S., and J. Letouzey, 2004, Variation of structural style and basin evolution in the central Zagros (Izeh zone and Dezful Embayment), Iran: *Marine and Petroleum Geology*, v. 21, p. 535-554.
- Sherkati, S., J. Letouzey, and D. Frizon de Lamotte, 2006, Central Zagros fold-thrust belt (Iran): New insights from seismic data, field observation and sandbox modeling: *Tectonics*, v. 25, p. doi:10.1029/2004TC001766, 2006.
- Sherkati, S., M. Molinaro, D. Frizon de Lamotte, and J. Letouzey, 2005, Detachment folding in the Central and Eastern Zagros fold-belt (Iran): salt mobility, multiple detachments and late basement control: *Journal of Structural Geology*, v. 27, p. 1680-1696, doi:10.1016/j.jsg.2005.05.010.
- Stacey, J. S., D. B. Stoesser, W. R. Greenwood, and L. B. Fisher, 1984, U-Pb geochronology and geological evaluation of the Halaban Amar region of the Eastern Arabian Shield, Kingdom of Saudi Arabia: *Journal of Geological Society of London*, v. 141, p. 1043-1055.
- Stampfli, G. M., and G. Borel, 2004, The TRANSMED transects in space and time: constraints on the paleotectonic evolution of the Mediterranean domain, *in* W. Cavazza, F. M. Roure, W. Spakman, G. M. Stampfli, and P. A. Ziegler, eds., *The TRANSMED Atlas, The Mediterranean Region from Crust to Mantle*: Berlin-Heidelberg, Springer-Verlag, p. 53-90.
- Stampfli, G. M., and G. D. Borel, 2002 A plate tectonic model for the Paleozoic and Mesozoic constrained by dynamic plate boundaries and restored synthetic oceanic isochrons: *Earth and Planetary Science Letters*, v. 196, p. 17-33.
- Stearns, D. W., 1971, Mechanisms of drape folding in the Wyoming Province: *Symposium on Wyoming Tectonics and Their Economic Significance*, 23rd Field Conference Guidebook, p. 149-158.
- Stearns, D. W., 1978, Faulting and forced folding in the Rocky Mountain foreland, *in* V. I. Matthews, ed., *Laramide folding associated with basement block faulting in the western United States* v. 151: Boulder, Colorado, Geological Society of America Memoir, p. 1-37.

- Sten, R. J., 1985, The Najd fault system, Saudi Arabia and Egypt: a Late Precambrian rift-related transform system: *Tectonics*, v. 4, p. 497-511.
- Sterns, A., 1975, Laramide Basement Deformation in the Bighorn Basin - the Controlling Factor for Structures in the Layered Rocks: 27th Annual Field Conference Guidebook, p. 149-158.
- Stöcklin, J., 1968, Salt Deposits of the Middle East: Geological Society of America Special Paper, v. 88, p. 158-181.
- Stöcklin, J., 1968, Structural history and tectonics of Iran: a review: American Association of Petroleum Geologists Bulletin, v. 52, p. 1229-1258.
- Stone, D. S., 1993, Basement-involved thrust-generated folds as seismically imaged in the subsurface of the central Rocky Mountain foreland., *in* C. J. Schmidt, R. B. Chase, and E. A. Erslev, eds., Laramide Basement Deformation in the Rocky Mountain Foreland of the Western United State, v. 280, Geological Society of America Special Paper, p. 271-318.
- Stoneley, R., 1981, The geology of the Kuh-e Dalneshim area of southern Iran, and its bearing on the evolution of southern Tethys: *Journal Geological Society of London*, v. 138, p. 509-526.
- Stoneley, R., 1990, The Middle East basin: A summary overview, *Seventy-five Years of Progress in Oil Field Science & Technology*, p. 55-60.
- Storti, F., and K. McClay, 1995, Influence of syntectonic sedimentation on thrust wedges in analogue models.: *Geology*, v. 23, p. 999-1002.
- Szabo, F., and A. Kheradpir, 1978, Permian and Triassic stratigraphy, Zagros basin, southwest Iran: *Journal of Petroleum Geology*, v. 1, p. 57-82.
- Takin, M., Akbari, Y., and MacLeod, J. H., 1970, Pul-e Dukhtar Geological Compilation Map 1:100,000 scale (Sheet 29237 E). Iranian Oil Operating Companies (IOOC).
- Takin, M., Y. Akbari, and J. H. Macleod, 1970, Pul-e Dukhtar Geological Compilation Map 1:100,000 (Sheet 20812 E), Iranian Oil Operating Companies.
- Talbot, C. J., and M. Alavi, 1996, The past of a futur syntaxis across the Zagros, *in* G. I. Alsop, D. J. Blundell, and I. Davison, eds., Salt tectonics, Geological Society of London Special Publication, 100, p. 89-109.
- Talebian, M., and J. Jackson, 2004, A reappraisal of earthquake focal mechanisms and active shortening in the Zagros mountains of Iran: *Geophysical Journal International*, v. 156, p. 506-526.
- Van Buchem, F. S., F. Gaumet, D. Baghbani, A. R. Ashrafzadeh, and H. A. Keyvani, 2002, Middle and Upper Cretaceous Sedimentation Patterns in the Dezful Embayment, SW Iran, AAPG Annual Meeting, Houston, Texas. March 10-13.

- Vendeville, B., P. R. Cobbold, P. Davy, J. P. Brun, and P. Choukroune, 1987, Physical models of extensional tectonics at various scales, *in* M. P. Coward, J. F. Dewey, and P. L. Hancock, eds., *Continental Extensional Tectonics*, Geological Society, London, Special Publications, 28, 95–107. .
- Vergés, J., 2007, Drainage responses to oblique and lateral thrust ramps: a review, *in* G. Nichols, C. Paola, and E. Williams, eds., *Sedimentary processes, environments and basins: a tribute to Peter Friend*, v. International Association of Sedimentologists Special Publication, Blackwell Publishing, vol. 38. Chapter 3, p. 29-47.
- Vergés, J., R. Karpuz, J. Efstatiou, M. H. Goodarzi, H. Emami, and P. Gillespie, in press, Multiple Detachment Folding in Pusht-e Kuh Arc, Zagros. Role of Mechanical Stratigraphy, *in* K. McClay, J. Shaw, and J. Suppe, eds., *AAPG Memoir on "Thrust Fault Related Folding"*.
- Weijermars, R., M. P. A. Jackson, and B. Vendeville, 1993, Rheological and tectonic modeling of salt provinces, *Tectonophysics*, v. 217, p. 143-174.
- Wennberg, O. P., M. Azizzadeh, A. A. M. Aqrabi, E. Blanc, P. Brockbank, K. B. Lyslo, N. Pickard, L. D. Salem, and T. Svånå, 2007, The Khaviz Anticline: an outcrop analogue to giant fractured Asmari Formation reservoirs in SW Iran, *in* L. Lonergan, R. J. H. Jolly, K. Rawnsley, and D. J. Sanderson, eds., *Fractured Reservoirs*, Geological Society, London, Special Publications, 270, 23-42.
- Zijderveld, J. D. A., 1967, A.C. demagnetization of rocks: Analysis of results, *in* D. W. Collinson, K. M. Creer, and S. K. Runcorn, eds., *Methods in Paleomagnetism*: Amsterdam, Elsevier, p. 254-286.