Vlad Constantin MANEA

Postdoctoral Scholar, Seismological Laboratory, Caltech, Pasadena, USA.

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Qualifications

Ph.D., September 2001 – October 21st, 2004, Geophysical Institute, Universidad Nacional Autonoma de Mexico, Mexico; supervisor: Dr. Vladimir Kostoglodov;

M.Sc., 1997-1999, Faculty of Hydrotechnics, Specialization: **G.I.S.,** Technical University of Civil Engineering, Bucharest, Romania;

M.Sc., **1995-1996**, Faculty of Civil Engineering, Specialization: **Geotechnical Engineering**, Technical University of Civil Engineering, Bucharest, Romania;

B.S., 1992-1997, Faculty of Geology and Geophysics, Specialization: **Geophysics**, University of Bucharest, Romania;

B.S., **1990-1995**, Faculty of **Hydrotechnics**, Technical University of Civil Engineering, Bucharest, Romania.

Research Experience

since 10 Nov 2004 – Postoctoral Scholar, Seismological Laboratory, CalTech, Pasadena, California, USA

14 Feb – 24 Feb 2005 –GPS campaign, Chiapas, Mexico; (a study for: Polochic – Montagua fault system and the contact between the North America and Caribbean Plates; continuation)

28 Jan.-10 Feb. 2004-GPS campaign, Chiapas, Mexico; (a study for: Polochic – Montagua fault system and the contact between the North America and Caribbean Plates; continuation)

03-2 semester (Feb. 2003)- Assistant, Geodynamics no. 60281, UNAM, Mexico.

7-21 February 2003- GPS campaign, Chiapas, Mexico; (a study for: Polochic – Montagua fault system and the contact between the North America and Caribbean Plates; continuation)

11-25 March 2002 - oceanographic campaign on the Justo Sierra university oceanographic boat:

"PMAG01-Geophysical (Magnetic and Bathymetric Survey) Study for the Submarine Mountains in the Mexican Gulf";

August 2001: GPS campaign in Southern Mexico. (a study for: Polochic – Montagua fault system and the contact between the North America and Caribbean Plates)

March – June 2000–ERASMUS-SOCRATES scholarship, Salzburg University, Austria. Landslide hazard assessment using statistical methods (univariate, multivariate analysis, etc.) within a GIS software package.

September, 1999-January, 2000 – Assistant, Geotechnics, University of Civil Engineering of Bucharest, Romania.

1999 September. GEONET project, University of Civil Engineering of Bucharest, Tempus department,

1996- 1997, Co-worker TEMPUS Department, Technical University of Civil Engineering, Bucharest, Romania

Applicability of G.I.S. for: Archaeological Studies, Town-Planning, Vulnerability of Ground-Water, Probability of Landslides Hazard, Palaeokarst Studies,

1996- 1997, Scientific Researcher Assistant, Institute of Geodynamics, Bucharest, Romania

Industrial Experience

1999-2001- Geotechnical Acting Chief. *Tractebel Consulting Engineering*, Romanian Branch.
During this period I performed the following activities:
-Geotechnical laboratory analysis for soils;
-Design of foundations for buildings, roads and railways;
-Design of retaining structures for the stabilization of slopes, embankments and cuttings;
-Stability computation for dams.

For the field geotechnical investigation I use the HYSON 100 kN LW static penetrometer manufactured by *a.p.v.d.Berg –Holland.* With this equipment is possible to record four independent parameters (cone tip resistance, mantle friction, pore water pressure and inclination of the well). There is also the possibility to take sample of soil from a certain depth in order to perform laboratory analysis.

1998-1999 Acting Chief Geophysicist –"*The Great Man Made River*" Project. *I.N.C. Il Nuovo Castoro* Libyan Branch, Libya.

1997-1998 Junior Geophysicist –"*The Great Man Made River*" Project. *I.N.C. Il Nuovo Castoro* Libyan Branch, Libya.

Between 1997 and 1999 I worked in Libya in Al-Saunah water field within the geophysical department. The following methods were performed:

-Electrical Log (long and short normal)-Natural Gamma
-Three arm caliper
-Four arm caliper
-Cement bond log
-Temperature/Conductivity Log
-Dual Neutron Log
-Gamma-Gamma Log
-Video Inspection (CCTV Survey).

I have experience in interpretation and processing data using geophysical software (e.q. WELLCAD, LOGCAD).

I performed the calibration tests into two test-wells every month for the radioactive methods and verifications for all the tools. I also performed the regular maintenance and repairing for all the geophysical equipment. The equipment was provided by *Robertson Geologging LTD* - U.K.

Conferences and Seminars

3-7 April, 2006 – GSA Backbone of the Americas-Patagonia to Alaska, Mendoza, Mendoza Province, Argentina (oral presentation).

3 February, 2006 – Thermal Models for Southern México: Towards MASE II. Dix Seismo Lab Seminar. Caltech, USA (oral presentation).

12 January, 2006 – Seminar: Flat vs steep subduction in México: an insight from numerical modeling. Departamento de Geofísica, Faculdad de Ciencias Fisicas y Matemáticas, Universidad de Chile (oral presentation).

10 January, 2006 – Seminar: Geodynamics of subduction zones: thermal structure, stress, slow slip, metamorphism, and volcanism. Departamento de Geofísica, Faculdad de Ciencias Fisicas y Matemáticas, Universidad de Chile (oral presentation).

8-9 November, 2005. Second Annual TO (Tectonics Observatory) Meeting (poster presentation);

29 October, 2005. First Annual MASE (MesoAmerican Subduction Experiment) Meeting (oral presentation);

30 October – 4 November, 2005, IVth National Meeting for Earth Sciences, Puerto Vallarta, (Jalisco, Mexico), (oral presentation); organizer special session: "Geodynamics of Subduction Zones: from numerical models to seismology and potential field methods - a session in honor of Hartmut Jodicke";

30 August – 3 September, 2005, Interdisciplinary Workshop on Earth's Mantle Composition, Structure, and Phase Transitions. Saint Malo, France (poster presentation);

28 August – 1 September, 2005, AGU Chapman Conference on The Great Plume Debate: The Origin and Impact of LIPs and Hotspots, Ben Nevis Hotel, Fort William, Scotland (poster and oral presentation);

19-23 June, 2005, Mantle Convection Workshop, Boulder, Colorado, USA;

24-29 April, 2005, EGU General Assembly, Vienna, Austria (poster presentation);

4 January, 2005, Tectonics Observatory Subduction Seminar, Caltech, Pasadena, USA;

13-17 December, 2004, AGU Fall Meeting, San Francisco, (poster presentation)**;**

31 October – 5 November, 2004, 4th Reunion nacional de ciencias de la Tierra, Mision Juriquilla, Queretaro, Mexico (poster presentation);

21-27 August, 2004, International Workshop on Japan-Kamchatka-Aleutian Subduction Processes – Linkages among tectonics, seimicity, magma genesis, and eruption in volcanic arcs, Petropavlovsk-Kamchatsky, Russia (oral presentation);

17-21 May, 2004, Joint Assembly, Montreal, Canada (poster presentation);

25-30 April, 2004, EGS - AGU - EUG Joint Assembly, Nice, France (oral presentation);

17 February, 2004, Seminar, Geosciences Center, Campus Juriquilla, Querretaro, UNAM, Mexico.

8-12 December, 2003, AGU Fall Meeting, San Francisco, (poster presentation);

4 December, 2003, Seminars in Earth Sciences 2003-2004, Geology Institute, UNAM, Mexico;

17-19 November, 2003, IX Congress Division of Fluid Dynamics; Mexican Physical Society, at the Institute for Petroleum Research (IMP) in México City (oral presentation);

3-7 November, 2003, Annual Meeting, UGM, Puerto Vallarta, (Jalisco, Mexico), (oral presentation), Convenor, Special Session: "Thermal Structure, Metamorphism, Mantle Wedge and Tomography in Subduction Zones"**;**

23 October, 2003, Seminar, Instituto de Geofisica, UNAM, Mexico;

25 – 29 August, 2003, Penrose Conference; Plume IV: Beyond the Plume Hypothesis**;** Tests of the plume paradigm and alternatives*; Hveragerdi*, Iceland; http://www.mantleplumes.org/ (oral & poster presentation);

13 June, 2003, "PDE2D-A solver for partial differential equations and its applications for the geophysical modelling", Prof. S. Granville, Texas University, El Paso, USA and Vlad Manea, Geophysics Institute, Department of Seismology and Volcanology, Geophysics Institute, UNAM, Mexico;

6-11 April, 2003, EGS - AGU - EUG Joint Assembly, Nice, France (poster presentation);

1-3 April, 2003, The Geological Society of America, Cordilleran Section, Puerto Vallarta (Jalisco, Mexico), (oral presentation);

6-10 December, 2002, AGU Fall Meeting, San Francisco, (poster presentation);

4-8 November, 2002, IIIrd National Meeting for Earth Sciences, Puerto Vallarta, (Jalisco, Mexico), (oral presentation);

15-20 November, 1998, Japanese-Romanian Workshop on Landslide related Geohazards, Sinaia, Romania. (oral presentation) .

Publications -Articles

12/ Manea, V.C., and Manea, M., 2006. *Thermal models beneath Kamchatka and the Pacific plate rejuvenation from amantle plume impact.* Under minor revision: *AGU monograph;*

11/ Muñoz Salinas, E., **Manea, V.C.**, Palacio, D., 2006. *Lahar flow velocity on Popocatépetl volcano (Mexico).* Submitted to *Geomorphology*;

10/ Manea, V.C., Manea, M.**,** Kostoglodov, V., and Sewell, G., 2006. *Intraslab Seismicity and Thermal Stress in the Subducted Cocos Plate beneath Central Mexico*. Under Publication: *Tectonophysics*;

9/ Manea, V.C., and Manea, M., 2006. *The origin of modern Chiapanecan volcanic arc in southern Mexico inferred from thermal models*. Under Publication: GSA Special Paper 412 ch2: "*Natural Hazards in Central America*";

8/ Franco Sánchez, S.I., Kostoglodov, V., Larson, K.M., **Manea, V.C.,** Manea, M. and Santiago, J.A., 2005. *Propagation of the 2001-2002 silent earthquake and interplate coupling in the Oaxaca subduction zone, Mexico*. Earth Planets Space, 57, 973-985.

7/ Manea, M., **Manea, V.C.**, Ferrari, L., Kostoglodov, V. and, Bandy, W., 2005. *Tectonic evolution of the Tehuantepec Ridge*. Earth and Planetary Science Letters, 238, 64-77.

6/ Manea, M., **Manea, V.C.,** Kostoglodov, V., and Guzmán-Speziale, M., 2005. *Elastic Thickness of the Lithosphere below the Tehuantepec Ridge*. Geofisica International, vol. 44, no. 2, p. 157-168.

5/ Manea, V.C., Manea, M., Kostoglodov, V., and Sewell, G., 2005. *Thermal Models, Magma Transport and velocity anomaly estimation beneath southern Kamchatka.* in *Plates, plumes, and paradigms,* eds.: Foulger, G. R., Natland, J. H., Presnall, D.C., and Anderson, D. L. Chapter 31, pp. 388 – 31.

4/ Manea, V.C., Manea, M., Kostoglodov, V., and Sewell, G., 2005**.** *Thermo-mechanical model of the mantle wedge in Central Mexican subduction zone and a blob tracing approach for the magma transport.* Phys. Earth Planet. Int., vol. 149, p. 165-186. doi:10.1016/JPEPI2004.08.024

3/ Manea, V.C., Manea, M., Kostoglodov, V., Currie, C.A., and Sewell, G., 2004. *Thermal Structure, Coupling and Metamorphism in the Mexican Subduction Zone beneath Guerrero*. Geophysical Journal International, vol. 158, p. 775-784.

2/ Manea, M., **Manea, V.C.,** and Kostoglodov, V., 2003. *Sediment Fill of the Middle America Trench Inferred from the Gravity Anomalies.* Geofisica International, vol. 42, no. 4, p. 603-612.

1/ Kostoglodov, V., Bilham, R., Santiago, J. A., **Manea, V.,** Manea, M., and Hernandez, V. R., 2002. *Long-baseline fluid tiltmeter for seismotectonic studies of Mexican subduction zone.* Geofisica International, vol. 41, no. 1, p. 11-25.

In Preparation:
1/ Manea, M. and Manea, V.C., 2006. Curie depth point estimation from magnetic anomalies used as constraint for thermal models in Central Mexico. In preparation for JGR.

2/ Manea, M., and Manea, V.C., 2006. On the origin of El Chichón volcano and subduction of Tehuantepes ridge: a geodynamical perspective. In preparation for special JVGR issue on "25 Anniversary of the El Chichón eruption"

Publications -Abstracts

44/ Clayton, R.W., Perez-Campos, X., Husker, A., Iglesias, A., Kim, Y.-L., **Manea, V.C.,** Davis, P., Ferrari, L., Gurnis, M., and Kostoglodov, V., 2006. GSA Backbone of the Americas-Patagonia to Alaska, (3-7 April), Mendoza, Mendoza Province, Argentina. Session No. 9; T3. Shallowing and Steepening Subduction Zones II. Paper no. 9-10.

43/ Manea, M. and **Manea, V.C.,** Gurnis, M., and Turner, M., 2006. Magnetic quiet zone and flat subduction in central Mexico. GSA Backbone of the Americas-Patagonia to Alaska, (3-7 April), Mendoza, Mendoza Province, Argentina. Session No. 9; T3. Shallowing and Steepening Subduction Zones II. Paper no. 9-9.

42/ Manea, V.C. and Manea M., 2006. Anomalous mantle wedge in southern Mexico (Chiapas): Observational constraints and numerical models. GSA Backbone of the Americas-Patagonia to Alaska, (3-7 April), Mendoza, Mendoza Province, Argentina. Session No. 9; T3. Shallowing and Steepening Subduction Zones II. Paper no. 9-8.

41/ Manea, V.C., 3 february 2006. Thermal models for Southern Mexico: Towards MASE II, Dix Seismo Lab Seminar, Caltech, Pasadena, USA.

40/ Manea, V.C., Gurnis, M., and Turner, M., 2005. MesoAmerican Subduction Experiment, Preliminary Geodynamic Models. Second Annual TO (Tectonics, Observatory), Caltech, Pasadena, USA.

39/ Turner, M., Gurnis, M., Taylor, L., **Manea, V.C.,** Boyden, J., Law, H., Clark, J., Muller, D., 2005. GPlates: Interactivity Plate Reconstructions. Second Annual TO (Tectonics, Observatory), Caltech, Pasadena, USA.

38/ Manea, V.C. and Gurnis, M.,. 2005. Status of Geodynamic Modelling. First Annual MASE Meeting (MesoAmerican Subduction Experiment), Puerto Vallarta, Jalisco, Mexico.

37/ Kostoglodov, V., Franco-Sánchez, S.I., Larson, K., **Manea, V.C.**, Manea, M., and Santiago, J.A., 2005. Propagation of the 2001-2002 silent earthquakein the Mexican subduction zone, IVth National Meeting for Earth Sciences, Puerto Vallarta, Jalisco, Mexico;

36/ Manea, M. and **Manea V.C.,** 2005. Low temperature and high amplitude magnetic anomaly beneath Chiapas: evidence for a highly serpentinized mantle wedge, IVth National Meeting for Earth Sciences, Puerto Vallarta, Jalisco, Mexico;

35/ Manea, V.C. and Manea, M.**,** 2005. Pacific plate rejuvenation from plume impact in front of the Kamchatka trench: a mechanism to produce adakitic magmas for old and fast subduction zones, IVth National Meeting for Earth Sciences, Puerto Vallarta, Jalisco, Mexico;

34/ Manea, M. and **Manea V.C**., 2005. Serpentinized cold mantle wedge beneath southern Mexico: new insights from thermal models and magnetic anomalies. Interdisciplinary Workshop on Earth's Mantle Composition, Structure, and Phase Transitions, Saint Malo, France.

33/ Manea, V.C. and Manea, M., 2005**.** Thermal models beneath Kamchatka and the Pacific plate rejuvenation from a mantle plume impact. Interdisciplinary Workshop on Earth's Mantle Composition, Structure, and Phase Transitions, Saint Malo, France.

32/ Manea, V.C. and Manea, M., 2005. Thermal structure beneath Kamchatka and plume to arc magmatism transition. AGU Chapman Conference on The Great Plume Debate: The Origin and Impact of LIPs and Hotspots, Fort William, Scotland.

31/ Manea M. and **Manea, V.C**., 2005. Thermal structure of the Cocos slab beneath southern Mexico and its relationship with the arc volcanism. AGU Chapman Conference on The Great Plume Debate: The Origin and Impact of LIPs and Hotspots, Fort William, Scotland.

30/ Muñoz, E., **Manea, V.C.,** Palacios, D., 2005. Flow velocity during 2001 lahar in Popocatépetl volcano (México). Geophysical Research Abstracts, vol. 7, 05590. SRef-ID: 1607-7962/gra/EGU05-A-05590.

29/ Franco Sánchez, S.I., Kostoglodov, V., Larson, K.M., **Manea, V.C**., Manea, M., and Santiago, J.A., 2005. The 2001-2002 aseismic slow slip event and an interplate coupling in the Oaxaca subduction zone, Mexico. Geophysical Research Abstracts, vol. 7, 02218. SRef-ID: 1607-7962/gra/EGU05-A-02118.

28/ Manea, V.C., Manea, M., and Kostoglodov, V., 2004. Thermal Models for Kamchatka and the Position of the Volcanic arc. Eos Trans. AGU, 84(46), Fall Meet. Suppl., Abstract T21B-0532.

27/ Manea, M., **Manea, V.C**., and Kostoglodov, V., 2004. Thermal Models for Southern Mexico and Guatemala and the Position of the Volcanic Belt. Eos Trans. AGU, 84(46), Fall Meet. Suppl., Abstract T13B-1364.

26/ Manea, M., **Manea, V.C.,** Kostoglodov,V., 2004. Tehuantepec Ridge: a compressional structure? G05.01(130) 130-13. 32nd IGC Florence, Italy, August 20-28.

25/ Manea, V.C., Manea, M., Kostoglodov, V., and Granville, S., 2004. Thermo-mechanical of the mantle wedge in southern Kamchatka subduction zone and a blob tracing approach for the magma transport. G05.03(86), 130-8. 32nd IGC Florence, Italy, August 20-28.

24/ Manea, V.C., Manea M, and Kostoglodov, V., 2004. Mantle wedge thermal models constrained by the seismic P-wave velocity anomalies. GEOS, UGM, 23, No.2, Abstract GET-58, 181.

23/ Manea, M., **Manea V.C.**, and Kostoglodov, V., 2004. Unsteady mantle wedge flow beneath southern Mexico, Chiapas Volcanic Arc and Tehuantepec ridge formation. GEOS, UGM, 23, No.2, Abstract GET-59, 181-182.

22/ Manea, V.C., Manea, M., and Kostoglodov, V., and Sewell, G., August 21-27, 2004. The thermal structure beneath southern Kamchatka inferred from numerical models. Linkages among tectonics, seismicity, magma genesis, and eruption in volcanic arcs, IV International Biennial Workshop on Subduction Processes emphasizing the Japan-Kurile-Kamchatka-Aleutian Arcs, Petropavlovsk-Kamchatsky, 147-148.

21/ Manea, M., **Manea, V.C.**, Kostoglodov, V., and Ferrari, L., August 21-27, 2004. Tehuantepec ridge formation and Chiapas Volcanic Arc. Linkages among tectonics, seismicity, magma genesis, and eruption in volcanic arcs, IV International Biennial Workshop on Subduction Processes emphasizing the Japan-Kurile-Kamchatka-Aleutian Arcs, Petropavlovsk-Kamchatsky, 147.

20/ Manea, V.C., Manea, M., Kostoglodov, V., Sewell, G., and Singh, S.K., 2004. Intraslab Seismicity and Thermal in the Subducted Cocos Plate beneath Central Mexico, Eos. Trans. AGU, 85(17), Joint Assembly Suppl., Abstract, G21A-07 POSTER, JA115.

19/ Manea, M., **Manea, V.C.**, and Kostoglodov, V., 2004. Tehuantepec Ridge: a compressional structure?, Eos. Trans. AGU, 85(17), Joint Assembly Suppl., Abstract, T51A-12 POSTER, JA46.

18/ Manea, V.C., Manea, M., Kostoglodov, V., and Sewell, G., 2004. New insights for the Kamchatka subduction zone: thermal models, magma transport and tomographic imaging. Geophysical Reasearch Abstracts, vol. 6, 04473, Sref-ID: 1607-7962/gra/EGU04-A-04473.

17/ Manea, M, **Manea, V.C.**, and Kostoglodov, V., 2004. Tehuantepec ridge as a compressional structure. Geophysical Reasearch Abstracts, vol. 6, 04465, Sref-ID: 1604-7962/gra/EGU04-A-04465.

16/ Manea, V.C., Manea, M., and Kostoglodov, V., 2003. Blob Tracing Models for the Central Mexican Volcanic Belt. Eos Trans. AGU, 84(46), Fall Meet. Suppl., Abstract T41F-0246.

15/ Manea, M., **Manea, V.C.**, and Kostoglodov, V., 2003. Elastic Thickness of the lithosphere below the Tehuantepec ridge. Eos Trans. AGU, 84(46), Fall Meet. Suppl., Abstract T51F-0213.

14/ Manea, V.C., 2003. Thermal, mantle wedge flow and blob tracing models for the Central Mexican Volcanic Belt. S43, IX Congreso. División de dinámica de fluidos, Sociedad Mexicana de Fisica, Instituto Mexicano del Petróleo.

13/ Manea, V.C., Manea. M., Kostoglodov, V., and Sewell, G. 2003. Thermal model for the Kamchatka subduction zone, UGM, in special session: “La estructura termica de las zonas de

subduccion”

12/ Manea, V.C., Manea. M., Kostoglodov, V., and Sewell, G., 2003. Thermal, mantle wedge flow and blob tracing models for the Mexican subduction zone. GEOS, UGM, 23, No.2, Abstract TSSZ-5, 218.

11/ Manea, M., **Manea, V.C.,** and Kostoglodov, V., 2003. Elastic thickness of the lithosphere below the Tehuantepec ridge, GEOS, UGM, 23, No.2, Abstract GETT-18, 118.

10/ Manea, V.C., Manea, M., Kostoglodov, V., and Sewell, G., August 2003. Mantle wedge flow and thermal models fro the Central Mexican subduction zone. The hotspot handbook, Proceedings of Penrose Conference Plume IV, Beyond the Plume Hypothesis, Hveragerdi, Iceland.

9/ Manea, V.C., Manea, M., Kostoglodov, V., Sewell, G., Currie, C.A., and Wang, K., 2003**.** Mantle wedge flow and thermal models for the Central Mexican subduction zone, Geophysical Research Abstracts, EGU 2003, vol. 5, 07450.

8/ Manea, V.C., Kostoglodov, V., Manea, M., Currie, C., and Wang, K., 2003. Thermal models, coupling and metamorphism for the Mexican subduction zone beneath Guerrero. Paper no. 20-2, Cordilleran Section 99th Annual 1-3, 2003, Puerto Vallarta, Jalisco.

7/ Manea, M., **Manea, V.C.**, and Kostoglodov, V., 2003. Sediment fill in the Middle America Trench inferred from gravity. Paper no. 31-12, Cordilleran Section 99th Annual 1-3, 2003, Puerto Vallarta, Jalisco.

6/ Mortera-Gutierez, C.A., Bandy, W.L., Prol-Ledezma, R.M., Canet-Miguel, C., Ortega-Ramirez, J.R., Urrutia-Fucugauchi, J., Perez-Mortera, H., Pelaez-Gaviria, J.R., Pardo-Castro, G., Serrato-Diaz, G.S., Mendoza-Cervantes, K., Rodrigues-Chavez, F., Manea, M., **Manea, V.C.**, Cruz-Ocampo, J.C., Molina-Cruz, A., Machain-Castillo, M.L., Arellano-Torres, E., and Flores-Ruiz, J.H., 2002. 3D Bathymetry and Magnetic Evidence of no Existence of Volcanic Edifices on the Gulf of Mexico Continental Slope Offshore the Veracruz Coast, Mexico. Eos Trans. AGU, 83(47), Fall Meet. Suppl., Abstract V11A-1362.

5/ Manea, V.C., Kostoglodov, V., Currie, C., Manea, M., and Wang, K., 2002. Temperature Models for the Mexican Subduction Zone. Eos Trans. AGU, 83(47), Fall Meet. Suppl., Abstract T62B-1303.

4/ Manea, M., **Manea, V.C.**, and Kostoglodov, V., 2002. Accretionary Prism in the Mexican Subduction Zone Inferred from Gravity Modeling. Eos Trans. AGU, 83(47), Fall Meet. Suppl., Abstract T62B-1304.

3/ Mortera-Gutierez, C.A., Bandy, W.L., Prol-Ledezma, R.M., Canet-Miguel, C., Cruz-Ocampo,

J.C., Perez-Mortera, H., Pelaez-Gaviria, J.R., Pardo-Castro, G., Serrato-Diaz, G.S., Mendoza-Cervantes, K., Rodrigues-Chavez, F., Manea, M., **Manea, V.C.**, Urrutia-Fucugauchi, J., Molina-Cruz, A., Machain-Castillo, M.L., Arellano-Torres, E., and Flores-Ruiz, J.H., 2002. Evidencia batimétrica y magnética de no existencia de volcanes marinos en el talud continental del Golfo de México enfrente de la Costa de Veracruz, GEOS, UGM, 22, No.2, Abstract GEOM-02, 223.

2/ Manea, V.C., Kostoglodov, V., Curie, C.A., Manea, M. and Wang, K., 2002. Temperature Models for the Mexican Subduction Zone, GEOS, UGM, 22, No.2, Abstract GET-22, 155.

1/ Manea, M., **Manea, V.C.**, and Kostoglodov, V., 2002. Accretionary Prism in the Mexican Subduction Zone Inferred from Gravity Modeling, GEOS, UGM, 22, No.2, Abstract GET-21, 154.

Collaboration in Scientific Projects

2005-2008 – Seismo-tectonics of Michoacán, Mexico: 20 year after the 19th of September, 1985 earthquake. (CONACyT 46064-T, UNAM, Mexico).

2005-2007 – Seismic cycle and the crust deformation in the subduction zone, Mexico. (PAPIIT, IN102105, UNAM, Mexico).

2004-2006 – MesoAmerican Subduction Experiment (MASE)-Caltech, USA

2001-2004- Seismo-tectonic study of the crust deformations related with the seismic cycle in subduction zones, Mexico (DGAPA INI104801, Mexico)

2001-2004- Seismo-tectonic study of the Guerrero seismic gap, in Central Mexico. (CONACyT 37293-T, Mexico)

2002-2005 – Seismo-tectonic study of the western boundary between the Caribbean and North American tectonic plates. (CONACyT 36449-T)

2000-2003 – Geodetic and seismic constraints of slip rheology on the Guerrero coast of Mexico (joint cooperation UNAM, Mexico - University of Colorado, USA)

2000-2001 – Interseismic and preseismic deformation monitoring along the Mexican Pacific coast (PAPIIT IN104599, UNAM, Mexico)

1998-2003 – Interseismic deformation monitoring in central Mexico, Guerrero, using high precision tiltmeter (CONACyT 27868-T, UNAM, Mexico).

Professional Service

Reviewer for:
Geochemistry, Geophysics, Geosystems (G^3);
AGU monograph;

Media relations

TV interviews for public awareness in case of earthquakes in Southern California:
16 June 2005 (Telemundo - NBC)
17 June 2005 (Televisa, Univisión, Canal 22),
21 June 2005 (Telemundo, Televisa, Univisión, Canal 22)
TV documentary: Natural Hazards in Southern California and the San Andreas Fault:
10 October 2005 (Telemundo- NBC)
TV interviews related with the M7.6 (9 October 2005) Pakistan earthquake (Balakot):
11 October 2005 (NBC)
TV and radio interviews
7 December 2005 (Univisión)
9 December 2005 (Telefutura)
1 May 2006 (Telemundo)

Awards

Best Presentation within the category of Graduate Students, oral presentations, The Geological Society of America, cordilleran section, Puerto Vallarta (Jalisco, Mexico), April 1-3, 2003.

Research Interests

My recent research interests comprise a broad area in geophysics: computational geodynamics, oceanic plate mechanics, magnetism and gravity, volcanism, metamorphic processes in subduction zone and crust deformation monitoring.

In the area of computational geodynamics I have been working in the development of 2-D and 3-D numerical models of tectonic processes related with various subduction zones along the "Ring of Fire" (Mexico, Guatemala, Kamchatka and recently Chile). The main goal of my current work is to provide a basis for the sound interpretation of seismological observations made on local, regional, and global scales. From these models I hope to understand better how plate tectonics works, how plate tectonics and mantle flow are related, how and why mantle convection evolves over long time periods.

The state of stress in subduction slabs and its relationship with the intraslab earthquakes is another scientific interest that I have. I developed 2D numerical schemes to compute a type of stresses inside the subducting slabs which has been neglected in the last decades. It is about the thermally induced stresses in oceanic plates due to non-uniform heating during subduction. With these studies I hope to comprehend why the intraslab earthquakes occur between certain depths and what is the magnitude of the deviatoric stress field which might produce such earthquakes.

Additionally, I am involved in studies related with flexural deformation of lithosphere at fracture zones, gravity anomalies and lithospheric flexure.

Furthermore, my research interests are related with the application of gravity and magnetic anomalies to understand tectonic problems related with subduction zones. Actually I used these anomalies to constrain the subduction zones geometry, to study the sediment accumulation at the deep oceanic trenches and to study the mantle wedge metamorphism (i.e serpentinization).

Another important part of my research is related with the volcanism caused by subduction. I have been studying the propagation of magma through a convective mantle wedge using numerical models. Such models give new constraints regarding the magma viscosity and temperature inside the mantle beneath volcanic arcs. Also, I study the ascent time of molten magma blobs through the mantle and the relation with the U-Th disequilibria. Recently I begin to study the lahars behaviour

in active volcanoes.

The metamorphic processes in subducting slabs represent other scientific interest that I have. I investigate the slab dehydration and its relationship with the recently discovered “slow earthquakes”. Such studies can provide new insights regarding the actual mechanism that produces the slow earthquakes.

Finally, one of my central scientific interests is represented by field measurements. Using GPS and tiltmeter measurements I have been studying in the last four years deformation processes related with subduction zones and plate boundaries. The main outcome from such investigations is the better understanding of the seismic cycle and plate boundary forces.

Computer Skills

-Operating systems: Windows 9x, NT, XP, 2000, Linux,
-Programming languages: VISUAL BASIC, C/C++, Fortran, MPI, Perl, Bash
-Finite element programs: PDE2D, ANSYS, FEMAP, CitComS
-Graphical software: AutoCAD, AXUM, CorelDRAW, GMT, OpenDX
-GIS software: IDRISI, ArcView, ArcInfo.
-Potential field Modelling: MagPick, GM-SYS, Mirone
-Others: Surfer, Origin, Matlab, Mathcad

Memberships (since)

American Geophysical Union (AGU) - 2002
Mexican Geophysical Union (UGM) - 2001
European Geophysical Union (EGU) - 2003
Geological Society of America (GSA) -2003

Languages

English
Spanish
Italian
French
Romanian (mother tongue)

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