

CURRICULUM VITAE

Surname and first name: TODJIHOUNDE Léonard.

Date and place of birth: 03.22.1967 Allada (Benin).

Gender: Male.

Marital status: Married.

Academic degree: Ph.D in Mathematics.

Occupation: Associate Professor in Mathematics.

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Education (postsecondary):

1986-1991: **Master of Sciences Mathematics** at the faculty of sciences and technics of the National University of Benin.

1993-1994: **Advanced Diploma course in Mathematical Physics** (Riemannian geometry, functional analysis and partial differential equations, general relativity theory and quantum mechanics) at the Institute of Mathematics and Physical Sciences in Porto-Novo (Benin).

1995-1998: **Ph.D. thesis** in Mathematics (Differential Geometry) on the theme "harmonic manifolds, ε -equilibrium maps and harmonic objects on a Riemannian manifold" at the Max-Planck-Institute for Mathematics in Leipzig (Germany) under the supervision of Prof. Jürgen JOST. This thesis was doing in a join-program between the National University of Benin and german universities and has been defended on 16.12.1998. My local advisor is Prof. Jean-Pierre Ezin of National University of Benin.

Spoken and written languages: french, german and english.

Research Interests

- Geometrical structures on manifolds (harmonic, homogeneous and ball-homogeneous manifolds, hamonic tensors, etc...).
- Global and harmonic analysis.
- Variational calculus and nonlinear problems on Riemannian manifolds resulting of deformation's methods like Ricci deformation, mean-curvature flow, etc...
- Geometrical methods in Physics
- Convexity and dynamical systems.

Distinctions and academic responsibilities

- Third World Academic Sciences (TWAS) **Prize** - Edition 2003.
- *Associate Member* of Abdus Salam International Center for Theoretical Physic, Trieste (Italy).
- *External Member* of the Research Group on Riemannian Geometry and Global Analysis at the Max-Planck-Institute for Mathematics in the Sciences, Leipzig (Germany).
- *Reviewer* and *Member* of the American Mathematical Society (AMS).
- *Coordinator* of the Research and External Relations Office at the Institute of Mathematics and Physics, Porto-Novo (Benin).
- *Coordinator* (for Benin) of the African Network of Geometry and Algebra Applied to the Development (RAGAAD).
- *Member* of Geometries Network (GeoNet).

List of Publications (Leonard TODJIHOUNDE)

Books:

"Calcul Différentiel": cours et exercices corrigés,
CEPADUES-EDITIONS, Toulouse, 2004, ISBN: 2.85428.652.9.

Papers:

- *Harmonic maps and Kaluza-Klein metrics on spheres,*
arXiv:0809.2725v1, submitted for publication in **Michigan Mathematical Journal**. (with M. Benyounes, E. Loubeau)

- *g-Natural metrics of constant curvature on tangent bundles,*
arXiv:0809.1992v1, **International Electronic Journal of Geometry**,
Vol. 2. No. 1 (2009), 74-94. (with S. Degla and J.-P. Ezin)

- *Mean-value property on manifolds with minimal horospheres,*
Journal of the Australian Mathematical Society, Vol. 84, No. 2, 2008,
pp. 277-282.

- *Harmonic nets in metric spaces,* **Pacific Journal of Mathematics**,
Vol. 231, No. 2, 2007, pp. 437-444. (with J. Jost)

- *A pseudo-vanishing result for harmonic nets,* **Mathematical Sciences Research Journal**, Vol. 10, No. 9, 2006, pp. 229-235.

- *On the biharmonicity of product maps,* **International Journal of Mathematics and Mathematical Sciences**, Volume 2006, Article ID 73094, 1-11.
DOI 101155/IJMMS/2006/73094.

- *Dualistic structures on warped product manifolds,*
Differ. Geom. Dyn. Syst., Vol. 8, 2006, pp. 278-284.

- *"Ricci flow and geometrical structures related to the volume density function",* **Bul. Inst. Polyteh. Iasi, Sect.I**, vol. 3-4, 2005, pp. 1-8.

- "*Ricci deformation and conformal change of metrics*",
Bul. Cal. Math. Soc., Vol. 95, No.5, 2003, pp. 377-382.
- "*Jost maps, ball-homogeneous and harmonic manifolds*,
Advances in Mathematics, Vol. 172, No.2, 2002, pp. 206-224 (with J.-P. Ezin).
- "*Riemannian manifolds for which the identity is an ε -equilibrium map*",
Differential Geometry and its Appl., Vol.13, 2000, pp. 119-128.
- "*Mass center and Jost maps between Riemannian manifolds*", *Contemporary Problems in Mathematical Physics*, **World Sci. Publishing, River Edge, NJ, (2000), pp. 118-137** (with J.-P. Ezin).
- "*Remark on harmonic $(0,2)$ -tensors*",
Bul. Inst. Polyteh. Iasi, Sect.I, vol. 3-4, 1999, pp. 25-32.

In ICTP-Publications:

- *(Bi)-Harmonicity of (warped) product maps*, **International Centre for Theoretical Physics, IC/2006/002, Trieste, (2006).**
- *Manifolds with minimal horospheres and bounded derivative stability vector fields*, **International Centre for Theoretical Physics, IC/2006/003, Trieste, (2006).**
- "*Some geometric consequences from the Ricci-flow evolution of the geodesic distance function*", **International Centre for Theoretical Physics, IC/2002/1, Trieste, (2002).**
- "*Ricci deformation and conformal change of metrics*", **International Centre for Theoretical Physics, IC/99/89, Trieste, (1999).**
- *Center of mass, equilibrium maps and special Riemannian structures*, **International Centre for Theoretical Physics, IC/99/88, Trieste, (1999).** (with J.-P. Ezin)

Scientific and Professional Activities:

Associate Professor at the Departement of Mathematics and Computer Science/Instiute of mathematics and Physics of the University of Abomey-Calavi (Benin).

Faculty Member at the Nelson Mandela Institut - African University of Science and Technology (AUST) of Abuja (Nigeria).

01.27.2009-02.26.2009: Visiting Scientist at the Instituto Nacional de Matematica Prua e Aplicada (IMPA), Rio de Janeiro (Brazil).

10.18.08-10.26.08: Visiting Scientist at the University of Luxembourg (Grand-Duché de Luxembourg).

08.25.08-11.23.08: Visiting Scientist at the International Centre for Theoretical Physics (ICTP) in Trieste (Italy).

10.01.07-12.31.07: Visiting Scientist at the Max-Planck-Institut for Mathematics in the Sciences in Leipzig (Germany).

05.15.06-06.15.06: Visiting Professor at the Department of Mathematics of the University of Bretagne Occidentale, Brest (France).

10.31.05-01.31.06: Visiting Scientist at the International Centre for Theoretical Physics (ICTP) in Trieste (Italy).

09.01.2004-08.31.2005: Invited Lecturer at the Department of Mathematics and Computer Science of the University of Antilles-Guyane (Guadeloupe).

11.01.04-11.31.04: Visiting Scientist at the Institut des Hautes Etudes Scientifiques (IHES) in Paris (France).

08.01.04-10.31.04: Visiting Scientist at the Max-Planck-Institut for Mathematics in the Sciences in Leipzig (Germany).

07.13.2003-10.10.2003: Visiting Scientist at the International Centre for Theoretical Physics (ICTP) in Trieste (Italy).

01.10.2002-31.12.2002: Visiting Scientist at the Max-Planck-Institute for Mathematics in the Sciences (MPI) in Leipzig (Germany).

01.02.2001-08.31.2002: Invited Lecturer at the Department of Mathematics and Computer Science of the University of Reunion.

09.01.2001-11.30.2001: Visiting Scientist at the International Centre for Theoretical Physics (ICTP) in Trieste (Italy).

08.01.2000-10.31.2000: Visiting Scientist at the Max-Planck-Institute for Mathematics in the Sciences (MPI) in Leipzig (Germany).

10.01.99-10.31.99: Visiting Scientist at the Institut des Hautes Etudes Scientifiques (IHES) in Paris (France).

01.01.99-09.31.99: Postdoctoral Position at the International Centre of Theoretical Physics (ICTP) in Trieste (Italy).

1995-1998: Doctorant at the University of Bochum and at the Max-Planck-Institute for Mathematics in Leipzig (Germany)